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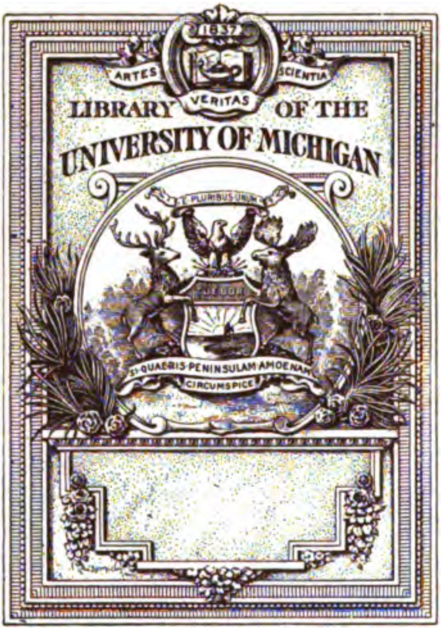

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# THE PHARMACIST.

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## FATTY MIXTURES.

### BY R. ROTHER.

**EMULSIONS.**—In a former paper (PHARMACIST, February, 1872) the writer proposed a method for the preparation of emulsions, and advanced certain views of their formation. Subsequently a more extended experience with the process, and a closer observation of the principle involved, did not lead to any material change in its execution or modification of the views. It appears that the underlying principle was correctly conceived, enunciated and applied. On this occasion the writer will, therefore, simply supplement the operation with a few auxiliary suggestions, and further extend and elucidate the theoretical view. An ample flat bottomed mortar and corresponding pestle should always be used. After a long and successful experience, the writer has adopted the use of powdered gum arabic in all cases where mucilage is designated, employing it in the proper quantity indicated, and abandoning the use of mucilage as a definite preparation ready made; the proneness of mucilage to decompose in the absence of otherwise objectionable preservatives, and the various advantages of powdered gum when properly used, having led to the change. In its application the powdered gum is mixed with from once to twice its weight of water, according to the nature of the oil; if this is thick and viscid, the mucilage must in a measure correspond; the converse is necessary where the oil is thin and mobile. Beyond a certain density, that is with a mucilage which is too thin, no emulsification can be effected. As a general rule, a viscid oil is more easily emulsified than another of an opposite nature; hence, when both a viscid and a mobile oil are compounded in the same mixture the operation is best performed by mixing them previous to their emulsification. However, beyond a certain degree of viscidity, approaching the solid state, emulsification is rendered more difficult. The incipient point of an emulsion is the most difficult stage to attain, and for this reason a dense ready formed emulsion is the most prompt and efficient, and, within certain indefinite limits, constant emulsifier. For this reason the yelk of eggs, with a needless addition of glycerin under the name of glyconine, has of late achieved considerable popularity as an effective emulsifacient. The main point, therefore, consists in getting a perfect emulsion formed at some particular place, and then reaching out from this as a center and bringing all of the oil, added by degrees, gradually within the converting vortex. During this operation it is necessary to add small amounts of water from time to time, in order to maintain a certain uniformity, not only in the required viscidity, but also in the relative proportion of the water to the oil. If the mortar is sufficiently large and broad bottomed much oil may be poured in at once, and even partially mixed by several wide sweeps of the pestle, to considerable advantage, providing the central motion of the pestle be immediately resumed. But if the amount of oil added at one time is unduly in excess of the conditions above noted, or if the wide sweep of the pestle be too long continued, the mixture at once assumes a characteristic broken appearance, from which precarious state the emulsion may often be retrieved by the addition of a little water and confining the trituration to a narrow range. However, if the disarrangement has so far progressed that this manipulation fails to recover the normal form, this is promptly secured by adding the whole of the oil to the disintegrated emulsion, mixing all, pouring the mixture back into the graduated measure, and then again adding it as before to a small quantity of new mucilage, and finishing the process in the usual manner. Great facility and speed in the manipulation, as also greater certainty in the result, may be had by slowly revolving the mortar with the left hand towards the movement of the pestle from the right. When sugar or alkalis are prescribed in an emulsion they must not be introduced before the emulsion is finished, since their presence either retards or entirely vitiates the proper result. Strongly alcoholic mixtures interfere with or destroy the emulsion by precipitating the gum. Alcohol, however, does not interrupt or prevent emulsification if diluted so as not to precipitate the gum. Weak alcohol may, therefore, replace water as an adjuvant in the process. Hence, when a strong alcoholic liquid is prescribed in an emulsion it must first be mixed with the aqueous components, and if such are not ordered in sufficient proportion no emulsion can be made.

The fundamental principle of emulsification consists in an extreme mechanical subdivision of the oil akin to pulverization. An emulsified oil bears the same relation to oil in mass as spray, or, more properly, foam does to water. The distinct globules or bubbles are kept asunder by an envelope or superstratum of water. In order to effect this condition, the first requisite consists in rolling the oil out, as it were, in excessively thin sheets and dashing these into shreds, which then coil into perhaps hollow globules with a coating of water. The next requirement is that the watery envelope should contain sufficient tenacity to maintain its form as it adheres to the oily fragments. As the pestle traverses the viscid mucilage the floating oil is drawn into the temporary gap, and immediately after, surrounded on all sides by a wall of tenacious fluid, causes the oily sheet to be rolled up, broken and folded within itself, still environed by the mucilage. The next stroke of the pestle repeats the operation, and this may be continued as long as the required tenacity endures. Since a dense emulsion permits the more rapid motion of the oil sheet, consequently it facilitates and lessens the process.

OINTMENTS.—Lard is, perhaps, one of the most variable and alterable substances handled by the pharmacist. Variable because of its lack of uniformity of composition as found in the market, probably greatly dependent upon the part of the animal from which it is derived and the manner of obtaining it; alterable because of its great tendency to change, not only in form through the varying temperature of the seasons, but also in composition from fermentation and oxidation. White wax and spermaceti are also in a measure variable, being always more or less of a rancid character. The various fixed oils used in pharmacy are also of an inconstant and changeable nature. The oil of mustard seed, which was once so good, has of late years become most execrable, doubtless owing to a lack of care exercised in its production, since the oil is mainly consumed in illumination.

During the hot summer months lard becomes more and more granular, then separates into distinct masses suspended in an oily medium, and eventually disintegrates into a slimy sediment of rounded granules of palmitin and an oily superstratum of olein holding palmitin in solution. Ointments prepared solely from lard without hardening additions fare mostly in a similar manner. In order to obviate this very annoying circumstance, the writer deems it advisable that, for summer consumption at least, such lard or ointment should be mixed with from one-sixth to one-eighth their weight of white or yellow wax, or a somewhat larger proportion of spermaceti, and, if necessary, treated with a proper quantity of benzoic acid or tincture of benzoin.

Ointment of potassium iodide almost invariably turns yellow, or even brownish, shortly after being made, from liberation of iodine, caused probably by the presence of oxyoleic acid. The German Pharmacopœia obviates this undesirable change by the incorporation of sodium thiosulphate equal in weight to one-twentieth of the iodide used. The officinal ointment of potassium iodide could therefore be properly prepared by dissolving one troy ounce of potassium iodide and thirty grains of sodium thiosulphate (formerly called sodium hyposulphite) in one fluid ounce of water, and gradually adding the solution to six troy ounces of lard (or lard and hardening as above), with constant stirring until the whole is thoroughly mixed. In all cases where a considerable proportion of some liquid is to be incorporated with a fat the liquid should be added to the fat by degrees and well mixed in before making the next addition. In cases where such mixtures are performed with a fused fat this should first be cooled to the point just short of congealation before the liquid is added.

Ointment of red and yellow mercuric oxide is rapidly discolored, doubtless by the active agency of the previous ointment. Many remedies have been proposed to counteract this, but the writer has found none so useful as sodium thiosulphate, added in proportion of five grains to one ounce of ointment. It takes a long time for ointment so protected to change, and the alteration is readily traced from the top downward, showing that the absorption of oxygen goes as a cause hand in hand with the decomposition.

In a previous article (PHARMACIST, August, 1872), the writer, in treating of ointments, dealt emphatically with the fact that glycerin, first thoroughly mixed weight for weight, added half at a time, to certain pulverulent substances, compounded in various ointments, gives them the desirable smoothness not otherwise obtained. Since then the writer has, however, found that simply lard, used in the same manner and relative amount as glycerin, yields precisely the same result. It appears that if the dry powder is first well rubbed, even where it cakes somewhat, and then thoroughly triturated in a spacious broad bottomed mortar with half its weight of lard, a tenacious mass is formed, which latter acts very similar to the mucilage upon oils, in rendering the powder particles individually invisible and imparting that desirable homogeneity or smoothness. Since in these cases the preliminary mixture is very tenacious, and therefore somewhat difficult to work, it having nearly the consistency of a soft pill mass, more than three or four ounces cannot be handled to advantage. Therefore, in such instances, the whole material, according to the amount, is divided into several batches. Then, when the preparatory mixture has been effected, the remaining lard or mixture is fused and gradually added to and mixed with the first product.

Ointment of oxide zinc is made by triturating two troy ounces of oxide of zinc to a uniform powder, then adding one troy ounce of lard, rubbing the mixture thoroughly, and finally adding by degrees eleven troy ounces of lard (or hardened mixture) previously fused, and then thoroughly incorporating the whole, stirring afterward occasionally, if required, until the ointment stiffens. Tincture of benzoin may also be added if desired.

Ointment of veratria, when made according to the officinal direction, by first dissolving the veratria in alcohol, is difficult to prepare, because veratria, instead of dissolving promptly, agglutinates into masses that firmly adhere to mortar and pestle and become more and more troublesome to manipulate as the alcohol evaporates. By the above proposed general process for ointments of powdered substances the annoying features of the officinal process are obviated and an elegant uniform mixture is most easily attained.

Cerate of cantharides has been the fertile cause of much comment as to what process of preparing it is the most advantageous in securing invariably an efficient product. On several occasions within recent years the writer pointed out the result, as a final conclusion, that a comparatively high heat is the prime requisite for the preparation of an invariably active cerate. A water bath heat, as the Pharmacopœia directs, is wholly inefficient, so much so that an otherwise most active cantharides will frequently not yield a reliable product. The writer has formed the conclusion, after many trials, that a cerate, in order to answer the requirements, must be prepared by subjecting the mixture to a much higher temperature than that of boiling water, and for a longer period. There is apparently no danger of damaging the product, unless a scorching heat is applied, but even in such a contingency no harm to the preparation would result. Every cerate which the writer has prepared at high temperatures has invariably bristled the second day after its preparation with brilliant cantharidin needles, the surest sign of activity next to a practical test.

SUPPOSITORIES.—In a former article (PHARMACIST, October, 1872) the writer stated that for making suppositories pure oil of theobroma is not near so good a menstruum as a mixture composed only two-thirds of the oil and one-third spermaceti. This mixture has the property of contracting more, and, whilst preserving a low fusion point, congealing more rapidly. But in that connection the writer pointed out the important fact that for the purpose of compounding soft extracts properly in suppositories the addition of a certain proportion of some dry powder, preferably starch, is almost imperative. Numerous occasions since have invariably borne out this fact and further shown its great advantages. The chilling of the moulds is also considered important. But if these are first dusted, also preferably with starch, so low a temperature will not be needed, and less loss of time incurred.

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PERCHLORIC ACID, A REAGENT FOR CERTAIN ALKALOIDS.—George Fraude has found that by boiling even minute quantities of *aspidospermine* (the alkaloid of Quebracho bark) with a few c. c. of commercial aqueous perchloric acid of spec. gr. 1130–1140, the liquid assumes an intense red color, which remains unaltered for weeks, even on exposure to air and light. The reagent was applied also to the most important other alkaloids, but it failed to give any reaction, except with the *Strychnos* alkaloids. Under similar conditions as above, brucine produces a dark madeira color, and strychnine a reddish yellow. All these solutions are characterized by absorption spectra.—*Deutsch. Chem. G.*

# EPIDEMICS FROM A CHEMICAL STANDPOINT.*

BY R. OGDEN DOREMUS, M. D., LL.D.

Dr. C. R. Agnew, formerly attached to the New York Hospital, informs me that, in consequence of the reception of patients suffering from "ship fever," the north wing of the old building near Duane street became so saturated with disease-breeding agents that it had to be abandoned. This was about twenty-five years ago. The patients were removed from this wing; the windows were kept open for many weeks to accomplish thorough ventilation; the walls and ceilings of the wards were scraped and whitewashed; but in vain! Even the workmen engaged in this cleansing process were taken sick, and one or more died.

So many hospitals, or parts of hospitals, in Europe and in this country, have become magazines of disease, puerperal fevers, pyæmia, etc., that many savans urge that the buildings shall be constructed of *wood*, and be burned up every second or third year.

When Pandora, the all-gifted, opened the fabled box and released its pernicious contents, which brought immeasurable suffering upon mankind, "the terrified female at length gained sufficient presence of mind to close the lid; and Hope thereupon was alone secured."

Prometheus, who formed the first man out of clay, kindled his torch from the chariot of Phœbus, with which he blew eternal flames into the breasts of his creatures. Notwithstanding the ire of Jupiter, he ascended a second time and brought fire from the sun.

The chemist was anciently designated the "philosopher by fire." Perhaps we are justified in saying that to him we should look to antidote, at least, certain of the evils set free by her whom Vulcan made, and intended to be the consort of the son of Iapetus.

By the potency of modern science Hope has been released from Pandora's box.

We propose to show that spirit can be set at war with spirit, the combat resulting favorably to humanity.

There are no firmer believers in spirits than chemists; for they can make them of every hue of the rainbow, or colorless and invisible, or even black; of varying weights and odors; some grateful to our senses, others nauseating and disgusting; markedly differing in chemical qualifications—one the spirit of life, the vital air; while a host "whose name is legion" exist, and can at will be produced, which are destructive to life.

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* From Bulletin of the Medico-Legal Society of New York, January, 1879.

With but few exceptions, all poisonous emanations from humanity, in health or in disease, are compounds of the most gaseous of all gases, hydrogen.

This lightest of all known elements, when just released from combination with others, or in its "nascent" state, possesses marvelous powers of affinity. Thus, one pound of hydrogen can unite with sixteen pounds of sulphur, and can confer on this solid body its own condition of gaseity. With carbon it yields forms of illuminating gas; with many metals, as iron, zinc, arsenic, antimony, etc., it produces spirit-like bodies, some of which are most poisonous. Such substances as pus, vaccine virus, etc., are compounds of hydrogen; and future chemists will doubtless discover that all disease-propagating gases or germs consist in part of this particular ghost.

If, therefore, we can dehydrogenate them, or rob them of this spirit, we can destroy their power for evil.

To employ a political figure, chlorine gas is the great "ring breaker." It seizes upon the chief of the ring, *Hydrogen*, imprisons it, and breaks up the evil combination.

I have here a tall glass jar, the upper part of which contains sulphuretted hydrogen gas, the lower part water. On bubbling up through the water, this greenish-yellow gas, chlorine, as it reaches the ill-odored gas above, instantly deprives it of its hydrogen (forming with it hydrochloric acid); and you observe the yellow deposit of sulphur on the water, and upon the sides of the jar.

I now present a compound of carbon and hydrogen to this chlorine—black carbon is at once deposited, the hydrogen, by preference, combining with the chlorine.

Should I introduce the most poisonous form of arsenic, viz., arseniuretted hydrogen, to chlorine, the superior affinity of hydrogen for chlorine would be immediately pronounced; the hydrogen and chlorine would unite as before, and, should there be an excess of chlorine, a chloride of arsenic would be formed.

Should chlorine be exhibited to a mixture of sulphuretted hydrogen and arseniuretted hydrogen gases, it would deprive them both of their hydrogen; the sulphur and the arsenic, being in a "nascent" state, would unite and form a sulphide of arsenic, yellow orpiment.

If a glass rod be dipped in anhydrous hydrocyanic (prussic) acid, which has been liquefied by cold, on approaching the rod with its adherent drop to a rabbit, the animal falls dead before the poisonous liquid touches him—due to the inhalation of the vaporous or gaseous acid. If chlorine be presented to this most rapidly fatal of all the spirits, it instantly disarms it of its virulence by robbing it of its hydrogen.

If equal volumes of hydrogen and chlorine be placed in a glass flask in a dark room, on exposing them to the sunbeam they combine with explosive violence.

Hence we feel warranted in the assertion that if chlorine gas can be generated in great volume, and especially with the aid of moisture, which facilitates its action, it can dehydrogenate any of the virulent spirits which result from vegetable and animal decomposition.

In 1849 I was consulted by one of our largest transatlantic steamship companies as to the best method of disinfecting one of the state rooms, which had been occupied by a passenger in whom small-pox developed a few days after leaving Liverpool.

The liberal generation of chlorine gas in said compartment accomplished the desired result.

In the summer of 1865 I had the pleasure of meeting, on Broadway, Prof. Lewis A. Sayre, M. D., then Health Physician to our city. He announced that the steamship *Atlanta* had arrived at quarantine from Liverpool with a large number of steerage passengers; that sixty of them had died of cholera! He requested me to accompany him to the Mayor's office to discuss what should be done.

I expressed to Prof. Sayre and Mayor Gunther that chemical agents, *if liberally employed*, could decompose and destroy all these disease-spreading agents; that ships could be disinfected in twenty-four or forty-eight hours better than by a detention of forty days for ventilation; that modern chemistry would enable us to almost abolish *quarantine* by shortening the customary delay which its name involves.

*Carte blanche* was given by the Mayor.

Accompanied by my assistant, Dr. A. W. Wilkinson, a visit was paid to Dr. Swinburne, then Health Officer at quarantine, who gave his cordial co-operation.

Among the most efficient agents with which we successfully disinfected the ship referred to as freighted with disease, and many other vessels which subsequently arrived from dangerous ports, was chlorine gas. Rolls of sheet lead were taken on board the vessels, with hundreds of pounds of common salt and peroxide of manganese; also, carboys of sulphuric acid. The lead was unrolled, turned up at the edges, so as to make receptacles eight or ten feet in length, and four feet in breadth. Into these troughs the salt and the manganese were mingled with water, forming a black mud, and when all were ready to leave the hold or part of the vessel where the troughs had been placed, a carboy or more of sulphuric acid was poured into the aforesaid mixture.

Huge volumes of chlorine were immediately given off; hundreds of pounds of this greenish-colored gas arose and diffused in every direction. The hatches were "battened down," and this potent element was left to accomplish our purpose, viz., to dehydrogenate, and thus decompose the death-breeding gases and germs.

That this mode of treatment was eminently successful was demonstrated by the fact that not a single case of cholera appeared in this city, or the cities connected with this port, or the section of our country to which the emigrants passed. So complete was the disinfection that not only were the ships purified, but also the articles of merchandise from infected ports, as well as the baggage of cabin passengers and emigrants. In previous years cholera was known to have been developed in the interior of this State from boxes and trunks containing household articles which had been brought from parts of Europe where the disease existed.

Who can estimate the loss of life and property had cholera been introduced into New York, and thus probably have been disseminated through the country?

I am happy to learn that this process has been continued by my quondam college-mate, Dr. S. Oakley Vanderpoel, the present Health Officer at quarantine, to whom our city and the country are indebted for his faithful and efficient services.

Three years ago I was asked by the present Commissioners of Charities and Correction to undertake the purification and disinfection of the surgical wards of Bellevue Hospital. In certain wards pyæmia had proved very fatal. The *heroic* chlorine treatment (if I may use this expression) was adopted for the wards, and ozone for the water closets.

Strips of paper were pasted over the crevices around the windows and doors. Troughs of lead, as before described, were brought into the ward; a sack of salt was emptied into them, and about an equal weight of black oxide of manganese. These were intimately mixed, by stirring them with water, by means of wooden shovels. A carboy of sulphuric acid was emptied into pitchers, basins and other vessels, and placed by the sides of the troughs. The floors were then wetted with water, and steam was allowed to escape from the heaters until the condensed moisture had dampened the ceilings and was trickling down the walls.

Half a dozen assistants groped their way with me through the mist to the sides of the most remote trough; each of us simultaneously poured out the contents of the vessels filled with sulphuric acid upon the salt and manganese, repeating this operation at the second trough. We then hastily made our exit, and nailed up the door, lest any one should accidentally enter; for the amount of chlorine thus liberated would have proved fatal to any one who might have ventured into its presence.

The next day the windows were opened from the outside, and after an hour or more of ventilation we entered, and having first filled the earthen vessels with sulphuric acid, we stirred up the mass resulting from the previous day's reaction, then added this second dose of acid, and again rapidly retreated and secured the door.

In the first ward, where pyæmia had proved most fatal, the contents of the troughs, chiefly sulphate of soda and sulphate of manganese, were removed, and a second sack of salt with its equivalent of peroxide of manganese were mixed in them with water, and the full complement of sulphuric acid poured into the mixture, after filling the compartment with steam as before.

The walls and floors were then washed and scrubbed, after a third liberal treatment with chlorine was completed, twenty-four hours having been allotted for each dose of chlorine to fulfill its fell purpose, viz., to permeate the *plaster walls* and the *very stones* of the hospital in search of its prey, the foul, death-dealing gases and germs that lurked in these hiding places defying all ordinary methods of removal.

After a day's ventilation and drying the disinfection was considered complete. It was a pleasure to pass from the adjoining wards into the purified one; the mawkish flavor, so common to even the most cleanly hospitals, had entirely disappeared.

To test the efficiency of the chlorine gas the cotton sheets were left on some of the beds when the first charge was employed. The next day these sheets were so tender that the least touch sufficed to crumble them to pieces. The woolen blankets were disinfected, but uninjured.

All the other surgical wards in the north wing of Bellevue Hospital were treated twice with the most liberal charge of chlorine. Estimating from the quantities of the chemicals employed, between *two* and *three tons* of chlorine gas must have been produced by the reaction.

The method described for generating chlorine is preferable to the employment of hydrochloric (muriatic) acid and the binoxide of manganese, because of the more copious yield of gas, as may be shown by the following formulæ:

$$2(SO_3\ H_2O)+MnO_2+2NaCl= \\ SO_3MnO+SO_3Na_2O+2(H_2O)+Cl.$$

Here all the chlorine is liberated from the common salt (chloride sodium), the sulphate of manganese and the sulphate of soda remaining; whereas, by the use of hydrochloric acid only one-half of the chlorine is discharged as a gas, thus,

$$4\ (H\ Cl)+MnO_2=Mn\ Cl_2+2\ (H_2O)+Cl_2,$$

the other portion combining with the manganese to form the chloride of this metal.

The first process generates heat by the action of the sulphuric acid and the water. This facilitates the diffusion of the heavy gas.

In consequence of the very pronounced odor of chlorine gas many persons, including physicians, and even those who have written on the subject of its applicability as a disinfectant, err in regard to the *quantity* that should be relied on. One distinguished physician narrated to me that he signally failed. He placed some manganese in a *saucer* and poured hydrochloric acid upon it. Need we wonder at the result?

In a recent medical journal sent to me, a description of modes of disinfection is given. Under the head of chlorine the writer says: "Place four ounces of manganese on a plate and add hydrochloric acid to it!"

There are incidental advantages in resorting to sheets of lead as a suitable receptacle for the chemicals. Troughs of any length can be easily and quickly made; and after the residues of the reactions have been removed they can be rolled up into a compact form. By unrolling them and turning up the edges they can be used again, and as often as desired. The sulphuric acid forms an insoluble sulphate of lead on the inner surface, so that the metal is not perforated or destroyed.

The water closets connected with the surgical wards of Bellevue Hospital were deodorized and disinfected by sprinkling in the urinals, for a number of consecutive nights, a mixture of the manganate of soda and the sulphate of magnesia.

In contact with water these salts produce the *permanganate* of soda, and at little cost. The reaction is thus expressed by symbols:

$$3(\mathrm{Mn\ O_3\ Na_2O})+2(\mathrm{SO_3\ MgO}=$$
$$(\mathrm{Mn_2\ O_7\ Na_2O})+\mathrm{MnO_2}+2(\mathrm{SO_3\ Na_2O})+2(\mathrm{MgO}).$$

Permanganate Soda + Binox: Manganese + 2 (Sulphate Soda) + 2 (Magnesia.)

In contact with the impurities of the urinals the permanganate of soda decomposes, yielding a most active form of oxygen, nascent oxygen, or ozone, which at once deodorizes and disinfects.

This mixture has no unpleasant flavor such as characterizes carbolic acid, cresylic acid, chloride of lime, hypochlorite of soda (Labarraque's solution), and many other disinfectants. It may be constantly applied without annoying the patients of the sick room or hospital. It should be kept by the side of the urinal, and the mixed powders should be thrown into the vase or urinal each time it is used.

The liberal generation of chlorine gas has been repeated at Bellevue every few months, and with the happiest results. The most sanguine anticipations could not surpass the statement made by Dr. James R. Wood, the oldest surgeon of the hospital, that "since this thorough purification no case of pyæmia has originated in the surgical wards!"

A few years ago the Commissioners of Charities and Correction had under discussion the advisability of stripping the walls of Bellevue and relining the edifice with wood and plaster. I doubt if even this expensive procedure would have accomplished a much better result than was obtained by scraping the walls of the old New York Hospital, for the very stones were doubtless impregnated with poison.

If we ignore chemistry, the ancient Hebraic process is the only efficient one—to "break down the house, the stones of it, and the timber thereof, and all the mortar of the house, and carry them forth out of the city into an unclean place;" unless we construct our hospitals of *wood*, and burn them as occasion demands.

The latter method would effectually carry out the signification of the word *purify*,—the treatment by fire.

But in a large city we need hospitals distributed within its precincts. The application of the torch might accomplish more destruction than anticipated, unless hospitals were in the outskirts of our cities. There are seventeen hospitals in different parts of Paris.

To transport patients several miles diminishes their chances of recovery, especially "accident cases."

The explosion of the Staten Island ferry-boat Westfield at the South Ferry, shortly after the demolition of the old New York Hospital, demonstrated the necessity of a commodious hospital in the lower part of the city. Many of the scalded and mutilated victims of this horrible accident had to be conveyed a distance of three miles to Bellevue.

From 10 A. M. until 3 o'clock in the afternoon the major part of the active brains of New York is in the lower extremity of our city. Accidents may occur to the rich man as well as to his hired laborer. Some of our wealthiest men have died in their down-town offices. Four years ago one of the Mayors of New York died in the City Hall. Medical men of distinction were miles away. Had there been a hospital down town physicians of experience could have been commanded instantly.

Some may reply, we have provided a few beds in the lower part of the city where the sick and injured may be temporarily cared for. But those in attendance are mostly young men, and, although of undoubted ability, have not enjoyed the years of practical knowledge which might be preferred.

If a large hospital was established, say on the Battery, the most eminent surgeons and physicians of our city would be competitors for the important positions, and thus at all times, assuredly of the day, their services might be commanded. The attention of our citizens, and of the Commissioners of Charities and Corrections, should be called to consider the advisability of some such provision.

One of the members of the Board of Trustees of the New York Hospital, distinguished for his deep interest in caring for the sick, and whose liberality has recently been expressed in the erection of a surgical pavilion at Bellevue, favored me with a visit, at my office, shortly after the completion of the elegant new hospital in Fifteenth street, between Fifth and Sixth avenues. The purpose of the visit was to solicit the details of the chemical treatment in the purification of Bellevue Hospital.

He stated that attacks had been made in the public journals upon the folly and extravagance of the Board in constructing the elaborate and expensive building, which at any time, and even within a few months, might become in part impregnated with disease, so as to be unfitted for the reception and treatment of patients; and like the north wing of the old New York Hospital in Broadway (just above the City Hall Park), would have to be abandoned, and this in the face of the views of many European and American physicians, that hospitals should be of wood, and burned every second and third year.

We feel justified in claiming, as the result of personal experience, that the ancient destructive methods may be abolished; that by resorting to the active and diffusive chemical agents, in *sufficient quantities*, not only may clothing and goods be thoroughly disinfected, but that ships, and even houses and hospitals of solid masonry, may be speedily and completely purified.

Chemistry, *heroically* employed, may save nations from the miscalled "visitations of Providence," which are really resultants of *improvidence*, ignorance and neglect. Thousands of lives may be spared; innumerable sufferings avoided; the retardation of commerce, by the forty days' delay at our ports, prevented, which involves millions of money; our dwellings and commodious hospitals kept in a fitting condition for those enjoying the blessings of health or suffering from accident or disease.—*Med. Jour. and Examiner.*

## ANALYSIS OF CINCHONA BARKS.

The *Chemical News* prints from "a correspondent" the following important paper on the "Analysis of Cinchona Barks:"

### "ETHER PROCESS,"

*For the Estimation of Quinine in Cinchona Bark.*

Take 1,000 grains finely-powdered bark; 8 fluid oz. of alcohol (methylated) at 35 to 40 per cent., sp. gr. 0.872; 500 grains hydrate of lime; 16 fluid oz. ether (methylated), 0.730 sp. gr.

Let the bark be powdered without leaving a residue, and passed through a sieve of at least 100 meshes to the inch (fine cypress). Pour upon the powder sufficient alcohol to form a liquid paste, heat for á few minutes until the fiber is thoroughly penetrated by the liquid. Introduce into the paste the hydrate of lime in fine powder, mix thoroughly, heat on a plate until all the alcohol is expelled and the powder thoroughly dry. Treat this in a displacement apparatus with successive portions of ether; thus, 4 oz. to macerate, and *six* successive 2 oz.; evaporate percolate rapidly.

1. Fuse product at 120° C. = crude quina + coloring and fatty matter.
2. Dissolve the residue in alcohol, and estimate with standard sulphuric acid = total sulphate of crystalline and amorphous quina.
3. Weigh the sulphate of quinine crystals obtained.

Cinchona barks of all species contain a natural acid, called by some kinic and by others quinovic acid. This acid exists in combination with one or more of the alkaloids, quinia, quinidia, cinchonia, cinchonidine, according to the variety of the bark.

*Calisaya Bark* (Bolivia), of both quilled and flat varieties, contains wholly, or almost wholly, quinia; quinidia and cinchonia being rarely met with. (Ether process specially adapted.)

*Red Bark*, *Carthagena*, *Soft Columbian*, by which names they are known in commerce, contain both alkaloids of quinia and cinchonia, and to a greater or less degree quinidia. The ether process is also applicable, in so far as the estimation of the quinia and consequent determination of the commercial value for the manufacture of quinine is concerned.

*Loxa, Brown or Gray Barks,* commercial names, contain almost wholly cinchonia and cinchonidine. The ether analytical process is not applicable to this variety.

The lime is added to decompose these quinovates of the alkaloids, in order that the latter may be exposed to the solvent action of the menstruum in the free state.

The ethereal solution (percolate) will contain the total quinia, *with traces only* of the other alkaloids when they are present, together with fatty and coloring matter.

Evaporated ethereal solution, fused at 125° C., will be the total *crude* quinia plus coloring and fatty matter. *Note the weight.*

Dissolve by aid of a water bath in about 1 oz. of absolute alcohol, and add gradually (having a piece of litmus paper in the solution), until a *faint* acid reaction is indicated, a standard sulphuric acid of known strength, by preference one in which 100 c. c.=10 grms. crystal sulphate quinine, if a 1,000 grain measure burette be used, so that 1,000=100 grains quinia sulphate crystals. *Note quantity of acid for neutralization.*

Product estimated as total basic sulphates of crystalline and amorphous quinia. The strength of the acid can easily be deduced from the following:

Composition of air-dried crystal sulphate of quinia—

$$\begin{array}{rl} & 74.31 \text{ anhydrous quinia.} \\ (SO_3\text{—}) & \left.\begin{array}{r}9.17\\ 2.06\end{array}\right\} 11.23 \text{ mono-hydrated acid.} \\ & 14.45 \text{ water lost at } 100^\circ \text{ C.} \\ \hline & 100.00 \end{array}$$

If pure sulphuric acid of 1.843 sp. gr. = 96.8 per. cent. of $H_2SO_4$ real, then 11.23 = 11.6 acid of sp. gr. 1.843.

Take, therefore, 11.6 grms. and dilute to a liter with water.

To this alcoholic basic sulphate, when evaporated to dryness, add as many measures of the standard acid as used in the first instance. This will convert basic sulphate of quinine into acid sulphate, a salt exceedingly soluble (unlike ordinary sulphate, which will crystallize in the filter). Add about 1 oz. of water, and boil with a spirit lamp, being careful that no portion of the sides of the dish (No. I.) becomes charred.

Solution of the salt being complete, add a small quantity of *animal charcoal* (about five per cent. of the bark originally used). This animal charcoal should be completely purified by previous digestion in hydrochloric acid until the phosphate of lime is nearly wholly removed. Digest for about ten minutes, or longer if time is no object, then filter into a small dish (No. II.), wash the filter with two successive portions of boiling water (boiled in dish No. I.), acidulated with about a drachm (to cleanse it of all alkaloid) of the standard sulphuric acid.

The filtrate will consist of a decolorized solution of acid sulphate of quinine, strongly acid to litmus, and on the filter will be left with the animal charcoal all coloring and fatty (? tarry) matter.

Now evaporate the liquors (on a water bath, if time will permit) to about 1 fluid ounce, or more if the bark is very rich in alkaloid (such as in quilled calisaya barks, for instance); raise to boiling point, and add *very cautiously*, drop by drop, solution of ammonia of about 3 per cent. (1 part liq. ammon. 0.880, 10 parts water), until the solution has but a faint acid reaction, at which stage the quinia salt will again be as a basic sulphate; set aside to cool. When cold the whole will be a mass of crystals. Throw upon a dry filter, and allow the mother liquor to drain away. This liquor will contain the sulphate of amorphous quinia, any traces of the sulphates that may have been present of cinchonia, cinchonidine and quinidia, with sulphate of ammonia.

If the experiment has been properly conducted no crystalline sulphate of quinine will be in this mother liquor, as *sulphate of ammonia* decreases the solubility of sulphate of quinine.

Until, however, the operator becomes perfectly familiar with the process it would be advisable to evaporate this mother liquor, neutralize any excessive acidity, and look for a further crop of crystals, which will rarely exceed 0.1 per cent. of the bark operated on.

Dry crystals in air; weight = amount of crystalline sulphate of quinine in original bark. A more rapid and certain method is to dry them at 100° C., and estimate as 85.5 dry = 100 crystals (*vide* composition of sulphate of quinine).

Any method of analysis intended as a sure guide for the manufacture of quinine must embrace a stage in which the quinia is weighed as *pure white sulphate.*

### ADVANTAGES OF THIS PROCESS AS COMPARED WITH ACID PROCESS.

1. Rapidity (twenty-four hours at the most).
2. Extraction of that alkaloid only upon which the commercial value of the cinchona barks depends.
3. Non-production of amorphous quinia, so liable by protracted boiling, as in acid process.
4. Inexpensive.

### ACID PROCESS.

*For the Complete Analysis of any Variety of Cinchona Bark.*

Take of bark in fine powder 1,000 grains; sulphuric acid (1.843), 50 grains; water, 2 pints; hydrate of lime, a sufficiency.

Add the acid to the water, and divide it into two portions, in which successively boil the bark. After each decoction throw upon a calico filter until drained; then boil the bark in ½ pint of water only, drain upon filter, and press. Mix the decoctions, concentrate to ½ pint, cool and add milk of lime until the liquid is distinctly alkaline. Collect the precipitate by filtration, and purify by careful washing, then dry at 95° to 100° C., and powder. Boil this powder repeatedly in strong alcohol (about 90 per cent.) and evaporate alcoholic extracts to dryness. Boil the residue with acidulated water, and filter. Make the solution alkaline with caustic soda (this alkali is to be preferred, as quinia is insoluble in soda, but soluble slightly in potash or ammonia) in a separator, and shake with chloroform. Draw off chloroform solution, and evaporate in a tared capsule. Product = total alkaloids of quinia, cinchonia, quinidia, etc. (All the alkaloids are soluble in chloroform.)

Treat the alkaloids with ether. Evaporate ethereal solution. Product=amorphous and crystallizable quinia. Treat this for obtaining crystalline value as directed in the ether process.

The insoluble portion is then dissolved in dilute acetic acid, and treated with iodide potassium (sat. sol.); the precipitate, if any, is iodide of quinidia: can be estimated thus:

100 grains — 71.68 quinidia.
— 94.5 quinidia sulph.

The liquid treated with ammonia or soda gives a precipitate of cinchonia, which, when dried at 120° C., may be estimated as—

82 — 100 cinchonia sulphate crystals.

Another method, although less accurate, is to digest in proof spirit (alcohol 0.920 sp. gr.), which dissolves quinidia, and leaves undissolved the cinchonia and cinchonidine.

If these latter alkaloids are required in a quantitative crystalline form dissolve the residue, after treatment with ether, in a mixture of 1 volume of alcohol 0.795 and 9 volumes of ether; from this the quinidia will crystallize. The cinchonia can afterward be crystallized from a saturated alcoholic solution.

To this process might be appended another, by percolation in the cold with alcohol. But as this process occupies considerable time in its first stage, it cannot be recommended for commercial purposes.

# CONTRIBUTIONS TO THE HISTORY OF POISONS.*

BY HENRY G. DEBRUNNER, F. C. S., PROFESSOR OF CHEMISTRY IN THE PITTSBURG COLLEGE OF PHARMACY.

It is a very strange and interesting fact that the knowledge of poisons, and of their actions, can be traced back to the most remote ages, as well as found extended among the lowest tribes of savages. The old Egyptians, according to a hieroglyphic record, understood the preparation of prussic acid. The members initiated into the secrets of alchemy were forbidden, by the punishment of the peach kernel, to betray any of their secrets. We know well enough, at present, that mashed peach kernels, on distillation with water, will yield prussic acid, hence it is not prejudicial to believe that this ancient nation was equally well acquainted with this fact.

The Greek mythology tells us of a fabulous country in the north, celebrated for the large variety of poisonous plants that grew there. It also mentions the names of Aeetes, Perseus, Hekate Medea and Kirke—Children of the Sun, that were the members of a family of magicians, well experienced in the knowledge of poisons, which if given in large doses would produce death, in small doses, however, would stimulate to great feats and enterprises. In a later period the curative merits of a number of poisons, if given in proper doses, became known. Hekate and Medea were the protecting goddesses of the new art. At the time of Pausanias there existed statues sculptured by Polyklitus, in Cornith, in honor of the above named goddesses. The moon, the patron of these dubious arts, was also divinely worshiped. The oldest Egyptian, King Menes, and also Attalus Phylometer, 134 B. C., last king of Pergamus, were celebrated for their knowledge of plants and poisons. They knew opium, hyocyamus, aconite, conium, colchicum, veratrum, belladonna, and also several inorganic poisons, as, for instance, sulphide of arsenic, arsenious acid, which was known by the name of sandarac cinnabar, and several lead preparations.

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* Read at the June meeting of the Pennsylvania Pharmaceutical Association.

The poisonous properties of decaying animal matter was also well known to them. Decomposing bodies of snakes, toads, fish, decaying blood, and so forth, were used to poison arrows and swords. According to Philostratus, it is stated that Titus fell a victim of such a poison.

Galenus, to whom we owe all these historical data, mentions Mithridates, Eupator and Nicander (204 to 138 B. C.) as well posted in the knowledge of poisons and their antidotes. Both of them, as well as Attalus, experimented on prisoners and culprits, in order to study the symptoms produced by a certain poison and its antidote. According to the above mentioned author, we therefore would find here the beginning of Toxicology, and, in fact, it is astonishing how closely and accurately the different symptoms caused by poisons are described, as well as the proper antidotes indicated.

Theophrastus further states that several poisons were known at his time, which, according to the quantity taken, would either kill the victim instantly or in several weeks, or even months, after being introduced into his system. Without alluding to the mysterious aqua tofana, it may be in place to mention that among the gypsies a vegetable poison is known, consisting of the germs of a fungus, which, if mixed with the food and eaten, will cause death in two to three weeks, under symptoms similar to those of typhoid fever. These germs, if introduced into the human system, begin to thrive, forming greenish threads of twelve to eighteen inches of length, and producing a severe inflammation of the mucous membranes of the alimentary canal. The name of this poison is dri or drei. Its detection is extremely difficult, as it decomposes very rapidly. A case of this kind happened in 1864, in London.

A similar poison is known by the natives of Java, according to the reports of Dr. Tunghuhn. That with the ancient Greeks poisoning was a mode of capital punishment is well known; we only need to remember the fate of Socrates, who was poisoned with a vinous decoction of conium maculatum.

During the reign of Emperor Nero, Locusta made it a regular business to poison those that had fallen into the disgrace of the imperial couple, among which victims we find the names of Germanicus and Britannicus.

Numerous attempts have been made as well by Greek as also Roman naturalists. Among the latter the two Plinys are the most prominent. To systematically classify the poisons, one divided them into mineral, vegetable and animal poisons, according to their origin; another, with regard to their physiological actions, into slow and instantaneously acting ones.

The highest and most glorious stage that *the art of poisoning* ever reached was in the time of ancient Venice. They knew vegetable as well as mineral poisons, and were well aware of the dangerous properties of decomposing animal matter, which not unfrequently was the substance employed for their criminal purposes.

Johann Baptista Porta (1537 to 1615), who wrote elaborate works on natural science, was well informed of the character and properties of numerous poisons, and it is he to whom the credit is due that the Italians got so high a reputation in "venefice," the art of poisoning. In a work of his on the culinary art, we find, as an appendix to his cook book, a number of what he calls "useful hints," among which the following is characteristic enough to deserve mentioning: As an effectual remedy to prevent an invited company from excessive wine drinking, he recommends an addition of rad. belladonna to the beverage. Whether this was for economy's sake on behalf of the host, or whether it was a primitive attempt of a temperance movement, is not stated. Sure enough the remedy is bound to be utterly effective, as it consists of a deadly poison. In general the above named author treats on cooking and poisoning under the same heading. In another work, "De Medici's Experimentis," he minutely describes a very appropriate *modus operandi*, as he calls it, to poison a person while asleep. It consists in mixing powdered seeds of stramonium with opium, belladonna and the juice of conium maculatum. This mixture is then introduced into a leaden can and allowed to stand in a warm place for several days, when fermentation will set in. In order to apply it, the sleeping victim is narcotized by holding the opened can, containing the previously mentioned mixture, under his nose. It is evident that in this case not only the poisons actually added, but also their products of fermentation, assist the criminal experiment. The same author also states that by sprinkling the victuals with stramonium or rad. belladonna very agreeable and sometimes even comical (?) hallucinations are produced.

It must appear quite natural that by means of such "scientific works" the reputation of the Italians became rather dubious. It, however, suffered a great deal more yet by the regular poisoners they employed, who considered killing their fellow men a regular business affair, but nothing else. In a pamphlet entitled "Venice, the Council of the Ten, and the State's Inquisition," by Carl Hopf, very interesting results of his investigations in the archives of Venice are published. Among others, we find a regular price current for the poisoning of several persons of political importance. Every year nearly the Venetian Government passed a so-called "provision," by which term nothing else was meant than the poisoning of a supposed enemy of the Venetian republic. As a surprising fact, it may be in place to mention that a Latin bishop, by the name of Blasius Cutena, sent in an offer to poison people a great deal cheaper than his competitors, the other applicants for the patriotic feat. All the poisons were first tried on animals, principally pigs. Again, on the 15th December, 1513, a Franciscan monk, Johann, of Raguna, offered to the Venetian Government to poison any one they deemed suitable to be put away with at reasonable terms. On the 4th January, 1514, it was decided, by a majority of ten against six, that the first experiment should be tried on Emperor Maximilian. Soon afterward the above named monk offered to the Council of the Ten of Venice to poison the following parties for the prices below mentioned:

| | Ducats. |
|---|---|
| The Sultan (ruler of Turkey) | 500 |
| The King of Spain (besides traveling expenses) | 150 |
| The Duke of Milano | 60 |
| The Duke of Mantua | 50 |

Singular enough, the Holy Father was only taxed at one hundred ducats. "In general," the offer concludes, "the higher the man stands, and the farther away he lives, the more I will have to ask for my services." The lowest bidder always obtained the contract, so that, finally, this noble business hardly paid expenses. The manuscript above spoken of is still kept in the archive of Venice.

The nature of the Venetian poisons is not exactly known. There is, however, little doubt that they were of organic origin. Towards the close of the fifteenth century more attention was paid to inorganic poisons, of which several were already known by the ancients. Basilius Valentinus, who lived at that time, mentions the dangerons and poisonous properties of gases liberated on roasting and calcining of certain arsenious lead and silver ores. The same fact was corroborated towards the end of the seventeenth century by Otto Tachenius. We meet afterward with attempts to neutralize or destroy noxious gases and poisonous exhalations, until, by Lavoisier, chemistry was applied to public hygiene, and regular scientific investigations in this direction were carried out, differing far from the mysticism of former centuries. The above named eminent chemist was yet occupied with experiments to destroy the poisonous gases that accumulated in the sewers of Paris and rendered their cleaning dangerous, when he was denounced an enemy of the people, and fell a victim of political intrigue in the great French revolution. In modern times the number of poisons has greatly increased. In a hundred cases there are seventy in which the poison employed is arsenic or some of its preparations, seven with copper and its compounds, five with mercury, five with cantharides, two with oil of vitriol, two with nux vomica, and the remainder with various other poisons.

Forensic chemistry has made such rapid progress that a crime of this kind can hardly escape detection. Among those to whom great credit is due for their researches in this direction we may name Orfila, Otto, Sonnenshean, Taylor, Wormly, and many others.

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TO CLARIFY LIQUIDS.—The *Moniteur des Produits Chimiques* gives the following receipt for clarifying wines, vinegars, etc., that are turbid. It is said to bleach all colored liquids, and to render bone black perfectly unnecessary: Albumen, 300 parts; neutral tartrate of potash, 3 parts; alum, 5 parts; sal-ammoniac, 700 parts. The albumen must, of course, not be coagulated. The ingredients are first dissolved in a little water, and then added to the liquid to be clarified.

# PREPARATION OF PERFECTLY PURE HYPOPHOSPHITE OF SODA.*

BY M. BOYMOND.

It has long been known that the preparation of hypophosphite of soda by the action of phosphorus on a solution of soda is not a practical process. This finds a ready explanation in the property possessed by the hypophosphites of oxidizing rapidly in alkaline solutions in proportion as the base is energetic and the solutions concentrated. It consequently happens that in heating phosphorus in a strong solution of potash or soda much phosphite is formed, and in boiling hypophosphites in such solutions they are converted, with disengagement of hydrogen, into phosphites and phosphates. Besides the formation of a considerable quantity of phosphite, this process presents the inconvenience that the phosphite and phosphate formed, as well as the alkali in excess, are dissolved, and are very difficult to eliminate.

As to the preparation of the hypophosphites by means of a milk of lime, although that base presents important advantages over soda—as the quantities of phosphite and phosphate formed are less considerable and the elimination of these salts and the lime in excess is more easy—this process does not yield a perfectly pure product; the proportion of phosphite and phosphate present amounts sometimes to as much as 5 per cent. Hypophosphite of soda prepared with such a salt of lime could not be pure. Besides, even when the hypophosphite of lime is perfectly pure, the evaporation in a water bath of an alcoholic solution of pure sodic hypophosphite is sufficient to give rise to an appreciable quantity of phosphite.

The author has obtained this salt entirely pure by employing, in the place of hypophosphite of lime, a clear solution of hypophosphite of baryta, in the following manner:

Twenty-five grams of commercial hypophosphite of soda, containing phosphite, and 1 gram of hypophosphite of baryta (sufficient to precipitate all the phosphorus and phosphoric acid contaminating the product) were mixed and water added so that the volume of the whole solution did not exceed 50 c. c. Some time afterward, without filtration, nearly 200 c. c. of absolute alcohol were added, the mixture was allowed to stand, and then filtered. In this way all the phosphoric acid was precipitated, as well as nearly all the excess of baryta in the state of hypophosphite. To the clear filtered liquid was added, in small quantities, sufficient solution of sulphate of soda to precipitate the baryta still dissolved; then about 100 c. c. of absolute alcohol was added and the liquid allowed to stand. The clear liquid obtained by filtration and decantation was afterward mixed in a larger vessel with about 500 c. c. of absolute alcohol, and as much absolute ether as was required to agitate the mixture strongly, when all the hypophosphite separated. The salt was collected and deprived of the last traces of alcohol and ether by passing over it a current of dry air.

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* From the *Schweizerische Wochenscrift f. Pharmacie.*

The ethereo-alcoholic liquid, after the separation of the salt, was completely neutral. The hypophosphite, crystallized in small needles, dissolved perfectly in water and in alcohol, and the solution was not rendered turbid by the addition of baryta or sulphate of soda. Once only it contained a trace of sulphuric acid, consequent upon the employment of a slight excess of sulphate of soda.

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## THE NEW CURE FOR PULMONARY CONSUMPTION.

In a late number of the *News* there was published an extract from one of our exchanges, which called attention to the *furore* just now excited in Germany by the alleged discovery of a positive cure for phthisis. Dr. Kroczak, assistant to Prof. Rokitansky, in his clinic at the University of Innsbruck, announced in the Vienna medical press, some weeks since, that consumption, even in its worst forms and last stages, where large cavities existed, and the patients were nearly moribund, was rapidly cured by the professor and himself with benzoate of sodium. Under this treatment it was alleged that such cases were restored to health in two months, all physical signs of cavities disappearing, and the patients gaining greatly in weight. Of course the newspapers were quick to seize upon and spread near and far the startling but blissful tidings. There is nothing too irrational for the visionary or the charlatan to assert, and nothing too improbable for mankind to believe; and when it is stated on the authority of a man in exalted position that a remedy for the most prolific source of human destruction has been found, it is not strange that a profound sensation is created. Incredulity, no doubt, seemed to the German people a sin against science when Rokitansky, the son of Rokitansky, was the reputed author of the cure.

A letter from a patient to Kroczak elicited the following response, which was published:

One part of benzoate of soda in a five-per-cent. solution twice daily to the thousand of the body weight by means of a good atomizer for seven weeks without interruption. With it we enjoin the use of abundant satisfaction of the rapidly returning appetite with meat diet, fresh air and abstention from all debilitating causes.

The treatment was rapid, simple, inexpensive, not unpleasant, and almost certain. The consumptives, abundant in Vienna, as they are everywhere, rushed to the druggists for benzoate of soda and Seigle's atomizers, and the demand soon surpassed the supply.

But already, alas! it seems the bubble has burst. The false hopes raised in the diseased breasts of their unfortunate countrymen by the Innsbruck teacher are being dissipated, and the harsh words charlatan and swindler are coupled with the name of the son of his father. Extensive trial of the benzoate of soda in private practice and in the hospitals of Innsbruck and Vienna "*have failed to yield the slightest favorable result, or a trace even of the most trifling diminution of dangerous symptoms*," says the Vienna *Medical Weekly*, in emphatic italics. Professor Albert, a colleague of Rokitansky, challenges him to a public demonstration of the truth of his assertions. He is charged with playing the part of a charlatan by taking advantage of the credulity of the lay public to make capital out of what the doctors consider "very like a swindle;" and the Vienna *Medical Weekly* goes so far as to demand that he be displaced from his professorship.

But we are loath to believe, indeed we cannot believe, the medical men in question have been guilty of a cold-blooded crime against science and humanity. They have been demented by a theory, carried into absurdity by a hobby, blinded by an uncontrollable belief in the illimitable power of antiseptic remedies.

All of us know that truthful persons have seen men and tables lifted and carried by unseen hands. A perverted imagination produced the vision. We lately heard from the lips of a distinguished Englishman (not a doctor) that he had seen a decanter at a dinner moved by invisible means from table end to table end, fill the glasses with wine, and return safely to its place. The Bible informs us "wine is a mocker," and in this instance it may have been the source of the delusion.

The London *Medical Times and Gazette*, from which the facts concerning the consumption cure are gleaned, commenting on the matter, says:

Nevertheless, in spite of this outcry, there is reason for believing that inhalations of benzoate of sodium may arrest septic processes (and there is no doubt that the later stages of phthisis are accompanied with or dependent on septic processes) in the lungs.

The faculty of the University of Innsbruck has appointed a committee to investigate the claims of Prof. Rokitansky, and doubtless the whole question will be thoroughly ventilated.—*Louisville Medical News.*

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## CREAM-PUFF POISONING.

BY HENRY LEFFMANN, M.D.

Articles of confectionery and fancy baking frequently produce marked irritation of the stomach, which irritation may extend into the alimentary canal. In most cases free vomiting or purgation relieves the symptoms, and after a brief condition of weakness the patient is quite restored. In a small percentage of these cases the trouble is more serious; symptoms indicating a remote effect occur; that is, the nervous system is more directly involved and the condition is like that of true poisoning. Cream puffs, a well known article of fancy baking, seem to be especially liable to this action. I have had my attention directed to a number of instances. In one of these about half a dozen persons who had eaten of these articles were seized, after an interval of about an hour, with violent symptoms like cholera morbus. In another instance, detailed to me by Professor Da Costa, two children were affected. In these the condition was one of prostration without marked signs of stomach or intestinal irritation. A third instance occurred recently, and in this the choleraic character was marked and lasted several hours. I have made chemical examinations of portions of cream puffs that have caused trouble, but have not found anything that could be assigned as the cause of the action. In some shops the puffs are baked in copper pans, and it has been suggested that the metal may find its way into the crust; but in objection to this may be urged that the symptoms are not those of copper poisoning, that sufficient quantity could not be absorbed in this way; and lastly, that I have not found copper in those which I have examined. The possibility of the use of some of the imitation flavoring materials must be borne in mind. Nitro-benzole (see *Bulletin* for July, p. 50) might be used as a substitute for bitter almonds. Bitter almond oil often contains prussic acid, but this is very volatile and would soon be driven out in the baking. The treatment of cases of cream-puff poisoning must be directed to the symptoms. Opiates may be used to control the violent irritation, and vegetable astringents might also be given. Conditions of prostration must be met by supportive measures, warmth to extremities and the usual methods. The prognosis appears to be quite favorable. All of the cases above referred to recovered.—*The Medical Bulletin.*

## WASHING POWDERS.

Hager, in *Phar. Centralhalle*, gives the following analyses:

The so-called English Washing Crystal is an impure, half-efflorescent crystallized soda, containing a large proportion of sulphate of soda and common salt.

Under the name of Washing Crystals simply a filtered solution of borax and soda has been introduced.

The English Patent Cleansing Crystal Washing Powder is a half-efflorescent soda, containing about twenty-five per cent. of Glauber's salts.

The Washing and Cleansing Crystals (Harper Twelvetrees & Sons) are pure crystallized soda, with one or two per cent. of borax.

Krimmelbein's Wool Washing Composition is a mixture of thirty-five parts of dried soda, ten parts of soap powder and ten parts of sal ammoniac.

Ward's Wool Washer is a mixture of ninety parts of effloresced soda crystals, with ten parts of soap powder.

The Universal Washing Powder (Henkel's) is a water glass containing soda, with a small percentage of tallow soap and starch powder.

Hudson's Soap Extract is a mixture of crystallized soda and soda soap, containing water (soap, 14.8; anhydrous soda, 30, and water, 55.)

A washing powder for the finest white linen is a powdery mixture of ninety parts of effloresced soda, with ten parts of hyposulphite of soda, and two parts of borax.

The so-called Finest Elastic Starch is a mixture of about seven to eight parts stearine, with one hundred parts of wheaten starch (melted stearine is mixed with about fifteen times its weight of starch, and after cooling powdered and combined with the rest of the starch).

The Berlin Prepared Brilliant Dressing Starch is good wheaten starch mixed with two to two and a half per cent. of borax.—*Scientific American.*

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## EFFECTS OF TEA ON THE SYSTEM.

1. With tea, as with any potent drug, there is a proper and improper dose.

2. In moderation, tea is a mental and bodily stimulant of a most agreeable nature, followed by no harmful reaction. It produces contentment of mind, allays hunger and bodily weariness, and increases the incentive and the capacity for work.

3. Taken immoderately, it leads to a very serious group of symptoms, such as headache, vertigo, heat and flushings of body, ringing in the ears, mental dullness and confusion, tremulousness, "nervousness," sleeplessness, apprehension of evil, exhaustion of mind and body, with disinclination to mental and physical exertion, increased and irregular action of the heart, increased respiration.

Each of the above symptoms is produced by tea taken in immoderate quantities, irrespective of dyspepsia, or hypochondria, or hyperæmia. The prolonged use of tea produces, additionally, symptoms of these three latter diseases. In short, in immoderate doses, tea has a most injurious effect upon the nervous system.

4. Immoderate tea drinking, continued for a considerable time, with great certainty produces dyspepsia.

5. The immediate mental symptoms produced by tea are not to be attributed to dyspepsia.

In the above experiment upon myself, the whole group of symptoms was produced, with no sign of digestive trouble superadded.

6. Tea retards the "waste," or retrograde metamorphosis of tissue, and thereby diminishes the demand for food.

It also diminishes the amount of urine secreted.

7. Many of the symptoms of immoderate tea drinking are such as may occur without suspicion of tea being their cause; and we find many people taking tea to relieve the very symptoms which its abuse is producing.—*Journal of Mental and Nervous Disease.*

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## NOTES AND ABSTRACTS FROM VARIOUS SOURCES.

THE DOCTOR VS. THE APOTHECARY.—It is time the physicians of New Orleans were taking action to protect themselves from the impositions of druggists and apothecaries. The knights of the mortar and pestle, instead of attending to their legitimate duties—compounding the prescriptions of physicians, and in good faith repeating these only when especially ordered—derive quite a revenue from the sale of repetitions; thus injustice is done the doctors, and the way is paved for weak-minded men and women to become the victims of opium, chloral or alcoholic drunkenness.

Is it dealing fair with the physician for the druggist to fill on demand an old prescription ordered fòr some particular case, but now lauded around and handed about by neighbors, who administer the remedy in cases of sickness when the diagnosis is the result of no greater skill than that possessed by an old woman?

There is still another matter connected with this subject that demands careful consideration. We allude to the habit that we fear is universally common among apothecaries, and it is their habit of "counter prescribing." We speak knowingly when we say there is a growth of this habit. Druggists prescribe daily for men, women and children whose faces they have never seen, and whose diseases are represented to be colic, costiveness or fits by that inevitable old woman in every neighborhood.—*New Orleans Med. and Surg. Jour.*

[Very true; so they do. In Louisville it is just as bad as it is in New Orleans. A co-operative society of physicians, buying its medicines in convenient and elegant form at wholesale prices, and furnishing them at cost to its members for dispensing in their practice, might be a means of saving both physicians and patients no little money.]—*Louisville Medical News.*

When physicians cease dispensing whenever and wherever they can, from the vest pocket and pocket case, even in the shadow of good drug stores, complaint as to counter prescribing will appear more just. As the case stands, the prescriber gets $1 to $5 for a prescription which costs him on an average thirty minutes of time. The pharmacist consumes often as much time in filling it, and receives as a gross profit perhaps thirty cents; but the insatiable doctor wants it all, and hence will start a "co-operative drug store."—ED. PHARMACIST.

ORIGIN OF PLANTS.—Cabbage grew wild in Siberia; buckwheat originated in Siberia; celery originated in Germany; the potato is a native of Peru; the onion originated in Egypt; tobacco is a native of South America; millet was first discovered in India; the nettle is a native of Europe; the citron is a native of Asia; oats originated in North Africa; rye came originally from Siberia; parsley was first discovered in Sardinia; the parsnip is a native of Arabia; the sun-flower was brought from Peru; spinach was first cultivated in Arabia; the pear and apple are from Europe; the horse chestnut is a native of Thibet; the quince came from Island of Crete; the radish is a native of China and Japan; the pear is supposed to be of Egyptian origin; the horse radish came from the south of Europe.—*Med. Jour. and Ex.*

A MINE OF PALM OIL.—According to the *Colonies and India*, that portion of the west coast of Africa which lies south of the River Volta furnishes the principal supplies of palm oil. Nearly 1,000,000 cwt. of this oil are annually exported to Great Britain, of the value of $7,500,000, its principal use being in the manufacture of soaps, perfumery, candles and similar articles. Among the natives it is highly valued, both for food (taking the place of butter), for lighting and cooking purposes, and for anointing the head and body. The so-called oil, which is rather a fatty substance, resembling butter in appearance, is obtained from the fruit of several species of palms, but especially from the one known botanically as *Elais guineensis*, which grows in abundance on the western coast of Africa, and from which it takes its specific name. So thickly do these trees grow, and so regular and rapid are their supplies of fruit, that in some localities, where the regular collection of the produce is not practiced, the ground becomes covered with a thick deposit of the oily, fatty matter produced by the ripe berries. Deposits of palm oil, which may almost be called "mines" of vegetable fat, exist in some parts of the Gold Coast, and which, if not in themselves worth working, at least practically illustrate the natural wealth of the country in such productions, and indicate its undeveloped resources. These "mines" would probably not repay the cost of exploration, as the palm oil is apt to become rancid and valueless for its general uses after long exposure, though for such purposes as candle making these deposits might still be valuable.—*Scientific American.*

ACCURATE AND DELICATE PROCESS FOR THE TOXICOLOGICAL DETECTION OF ARSENIC—(Prof. Selmi.)—The method is that of Schneider, modified so as to incur no losses. The substance to be examined is treated with hot concentrated sulphuric acid, and during the same time is traversed by a current of hydrochloric acid gas, which carries with it all the arsenic in the state of chloride, separating it from the organic substance with which it was mixed. The arsenical liquid is then placed in a Marsh's apparatus and tested in the usual manner. The author has been thus able to obtain the metallic ring on operating upon 100 grms. of animal matter containing 1-400th of a milligram of arsenious anhydride. The author criticises the process of Gautier, which answers for recent matter, but should not be adopted if the subject is putrid or mummified.—*Atti dei Lincei, in Chem. News.*

COLLOGRAPHY.—A greatly improved process, which is likely to supersede the *hectograph* and its congeners, appears to be that invented by R. Jacobsen, who, by the way, was also the originator of the latter process. The principle of the hectograph is this, that as many impressions may be taken from *one* writing as the quantity of ink, once absorbed, will permit. In the new process the writing is transferred upon a specially prepared paper or linen, and inked with a roller for every separate impression. The writing is first made with a peculiar log-wood ink upon ordinary paper and transferred upon the prepared surface. An ordinary printer's roller, full of printers' ink, is rolled over the surface, when it will ink the writing without soiling the remainder of the surface. A sheet of paper is placed over it, and an impression made, by gently rubbing a paper knife, etc., over it. Before the next impression the surface is inked again. All impressions are equally dense in color, and, as they are really *printed*, copies made by this process at present enjoy the exemptions granted to other printed matters by the German postal laws.—*Industrie Blatter, New Remedies.*

# EDITORIAL.

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## HOW TO CONDUCT A PHARMACY.

In selecting a location for a store, consider well the probable extent of the wants of the community, and do not be deceived by the flattering promises of a few individuals. Drugs, when not absolutely required, are always "drugs" in a commercial sense, which no amount of inducement will work off beyond the imperative demand of the hour. Having secured a good location, select a handsome, well lighted store, and fit it up for convenience as well as for appearance. Fixtures painted pure white, if varnished and kept quite clean, look very well, and are cheap. Marble-topped counters, with marble edgings at points not fully covered by show cases, add wonderfully to the elegance of a store, and yet do not cost very much more than heavy, fine black walnut. A nice floor of pine or hard wood, if kept scrupulously clean, looks very well; but oil cloth is now so cheap and good that it should always be employed, unless marble, the very best, and in the long run the cheapest floor, is selected.

The windows should be large, and ornamented with the usual insignia of show bottles, globes, jars, etc.; but snakes, frogs, tarantulas and spiders, too often exposed to create the impression that the proprietor is a naturalist, are out of place. Chemical apparatus, tastefully arranged, is always attractive. Not only the windows, but every part of the store, should be kept perfectly clean. Every bottle should be kept at least partly full. Empty bottles create the impression that you are out of some article of stock; and how, indeed, can the customer assure himself that the prescription you are filling for him does not require some of the drugs that should be in those empty bottles? Every bottle or other container in a drug store should be plainly labeled, no matter how simple and innocent the contents may be. The customer who observes unlabeled bottles standing around promiscuously naturally reflects that in such a state of affairs accidents are quite possible, and in this conclusion he is as well sustained by facts as by theory.

Patent medicines and their gaudy but deceptive show cards should never be given prominent places, if exposed to view at all. The exhibition of these remedies and their lying advertisements is indeed an insult to the medical profession. In the presence of these bottles, and cards guaranteeing sure and speedy cures for incurable diseases, the doctor is often obliged by his conscience to say to his patient, "I can give you no hope!" This candid statement the patient too often construes into a confession on the part of the physician of his inferiority to the quack. This conclusion is supported by the circumstance that the druggist honors the quack and nostrum maker by giving his circulars and medicines conspicuous places in his store, which the customer naturally thinks that the druggist would not do if the patent medicine circulars were filled with falsehoods. Physicians have become accustomed to this standard insult; but still we can but think that many of them feel it, and would be better pleased if it were omitted.

In looking around your store for defects and opportunities of improvement, do not fail to look in the mirror and see if your collar and shirt bosom are clean; if your clothes are free from spots and dust; if your hands and cuffs are clean; and, lastly, if your clothes fit you.

When a customer enters, approach not with an obsequious smile, but with the air of one who is willing to oblige. It is easy to say by appearance, as well as by words, "What can I do for you?" After receiving an order, the customer should always be invited to a seat. If a prescription is handed in, this should not be read before the patient, but behind the prescription case. We have often seen pharmacists look at a prescription and grimace while trying to decipher the wretched hieroglyphics until the suspicion of the customer that there was something wrong about either the prescription or the druggist became irrevocably implanted. Behind every prescription case should be found a few reference books, by the aid of which to determine quickly any unknown or dimly remembered points brought forward in prescriptions or other orders. In the event of a prescription or order requiring an agent not in stock, and which cannot be quickly obtained outside, it is better to frankly say so to the customer rather than to suggest a substitute, for the idea of accepting a substitute for a remedy prescribed by a physician or for one from which much special advantage is expected is hardly ever entertained, and the suggestion is often construed into an attempt to palm off some worthless drug, regardless of the good or evil it may cause. If a substitute will be accepted it will be asked for, and then with a good grace it may be suggested.

On the receipt of a prescription which is partly illegible or partly written in a language of which the exact equivalent in English cannot be given with certainty, it is a thousand times better to decline to compound it than to incur the great risk of guessing at its meaning. When possible, of course, the prescriber should be consulted as to its interpretation, but otherwise the truth should be told to the customer, who will not fail to appreciate your candor.

It is quite possible for every one to keep fully posted in all matters pertaining to pharmacy, and at the same time to gradually become proficient in some cognate department, as chemical analysis, botany, etc. Distinction acquired in this manner inspires confidence in the ability of the man, and really gives him an important advantage over his more lethargic brethren.

Finally, as an essential requisite to success, cultivate the habit of being strictly honest in every department of life. If you deceive your grocer or your landlord, or any one, in financial matters, the people will soon learn to distrust your scientific integrity. Most people believe, and correctly, too, that a rascal will cheat at every opportunity. Whoever will try to avoid his just and equitable obligations will probably substitute sulph. cinchonidia for sulph. quinia, and potassium bromide for potassium iodide, in prescriptions. No amount of asseveration will make us or the people at large believe to the contrary. When asked to name a good druggist, we find ourselves always saying, "Go to ——— ; he is not only able, but *honest*. You can rely on what he says, as well as upon his drugs." Suppose we were to say, "——— is skillful, but in general business relations is a scoundrel," how few persons would intrust themselves to his mercies because of his skill! On the contrary, we fear a skillful rascal more than a simple one.

Of course, sobriety is a *sine qua non* in pharmacy. The public, very correctly, will not tolerate even the suspicion of intoxication on the part of a pharmacist. Close economy is also very necessary to financial success. Neither the sales nor the profits of the business are so enormous as to enable any one to defiantly disregard the small leakages and losses. Indeed, we often think that the general success of pharmacists financially is rather due to the habits of economy which they usually fall into, rather than to any intrinsic richness or pecuniary fertility in their line of trade.

## BENZOIC ACID AND BENZOATES.

Since considerable inquiry exists at the present time concerning the benzoates, owing to some useful applications of them in medical practice, we have thought it advisable to present briefly the principal features of benzoic acid and its salts.

*Benzoic acid*, $H\ C_7\ H_5\ O_2$, analyzed first by Liebig and Wohler, occurs in gum benzoin, dragon's blood, storax, balsams of Peru and Tolu, castoreum, euonymus atropurpureus and in putrid urine of man and graminivorous animals. It is also formed artificially by the oxidation of hydride of benzoyl (ess. ol. almonds), and from naphthaline, a crystalline product, formed in the manufacture of coal gas, and from hippuric acid, an abundant constituent of the urine of horses and cattle. The pure acid is odorless, but is usually contaminated with minute traces of odoriferous material, often betraying in an unpleasant degree its source. It crystallizes in bright, pearly needles, which, under a low magnifying power, are seen to be six-sided prisms. These are often so agglutinated together as to give the crystals the appearance of thin plates. The taste is pleasantly pungent and sour. It reddens litmus paper, and melts at about 250° F. At about twice this temperature it boils and sublimes without loss or decomposition. It requires 200 parts of cold or 30 parts of hot water for solution, but in alcohol, ether, fats and oils it is very freely soluble. It is not decomposed by sulphuric acid, or by boiling dilute nitric acid.

*Benzoates.*—Since benzoic acid is a univalent grouping of elements its salts have the general formula, $R^1\ C_7\ H_5\ O_2$; but some acid salts exist of which the general formula is $R^1\ H\ 2\ C_7\ H_5\ O_2$.

*Benzoate of ammonium*, $N H_4 C_7 H_5 O_2$, is easily made by neutralizing ammonia water by benzoic acid, and subsequent evaporation and crystallization. It is somewhat deliquescent and is freely soluble in alcohol and water. During evaporation small quantities of ammonia must be supplied to compensate for loss by the separation of this volatile substance, otherwise the operation will result in the formation of *acid benzoate of ammonium*, which crystallizes in large rectangular crystals, and is a more stable and desirable salt than the normal benzoate.

*Benzoate of potassium*, $2 K C_7 H_5 O_2, H_2 O$, is easily formed by the neutralization of liquor potassæ by benzoic acid and evaporation over a water or sand bath. It crystallizes with difficulty in penniform crystals, which creep up the evaporating vessel. The *acid benzoate of potassium*, $K H (C_7 H_5 O_2)_2$, may be formed from the normal benzoate by dissolving the latter in dilute alcohol and adding as much more benzoic acid as was required in the formation of the normal salt.

*Benzoate of sodium*, $Na C_7 H_5 O_2$, Aq., may be made by neutralizing liquor sodium (sodic hydrate) by benzoic acid. The salt is very difficultly crystallizable from water, but more readily from alcohol, in which the salt is less freely soluble than in water. The crystals are pointed and efflorescent.

*An acid sodium benzoate* is possible. The normal salt, if evaporated rapidly, shows no sign of crystallization, but forms a white, pulverulent mass, readily soluble in water, and possessing a rather pleasant, slightly alkaline taste.

*Benzoate of lithium* is similar in constitution and physical properties to the corresponding salt of sodium.

*Benzoate of calcium* may be formed by shaking an excess of hydrate of calcium (slaked lime) with a hot aqueous solution of benzoic acid, filtering and evaporating the filtrate until crystals begin to form. On cooling, the benzoate, in the form of silky, feather-like tufts, with some larger needles of fine luster, will be found. The salt has a rather sweet, sharp taste, and dissolves in 29 parts of cold water. On being strongly heated the crystals melt and decompose, giving rise to a variety of products.

*Benzoate of magnesium* is very similar to benzoate of calcium. Benzoates of tin, lead, iron (ferrous and ferric), cobalt, nickel, mercury (ous and ic), silver, zinc, copper, gold, etc., are known, but are not likely to become favorites in medical practice. Benzoates are easily decomposed, almost all acids being able to displace benzoic acid, which from solutions separates in feathery crystals.

## BOOK NOTICES.

*Medical Chemistry.* By Prof. C. Gilbert Wheeler, of the Chicago University. Published by Wm. Wood & Co., New York. 8vo., 424 pp. Price, $3. For sale by Jansen, McClurg & Co., Chicago; also by S. J. Wheeler, 81 Clark street, Chicago.

Some time since the author issued substantially the first half of this work under the title of Organic Chemistry, which seemed to be so useful a compilation of information in regard to most of the more important proximate constituents of vegetables that we then favorably noticed his work. In this volume the first part is revised and partly rewritten, and is supplemented by a very concise and yet comprehensive treatise on animal chemistry. As the work now appears, it is equally serviceable to the physician and pharmacist, and, we think, is well worthy of a place in a library of select works of this character. To the physician and pharmacist, as a work of ready reference, it is in most cases all that could be desired. The information imparted is all in accordance with recent theories and discoveries. The typographical execution of the work is first-class in every respect.

*Physician's Pocket Record:* comprising a Visiting List and many Useful Tables. Devised by S. W. Butler, M. D. Edited by D. G. Brinton, M. D. Published at the office of the *Medical and Surgical Reporter*, 115 South Seventh street, Philadelphia.

The fourteenth edition of this useful book is before us. It could hardly be improved in any respect.

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Cockroach Poison.—Equal parts of powdered borax, Persian insect powder, and powdered colocynth, well mixed together, and thrown about such spots as are infested with these troublesome insects, will prove an effectual means of getting rid of the scourge. This powder, in all cases where its use has been persistent, has by long experience been found an infallible remedy.

# REVIEW OF CHICAGO DRUG MARKET.

During the past month the trade in drugs has been exceptionally active for the season. The general advance in prices which is maintained in other fields of commerce has not extended to drugs, many of which are now selling at prices ruinous to both importers and manufacturers. Essential oils generally continue high, and we note a few advances—bergamot, peppermint and wintergreen. Quinine and morphine are unchanged. Balsam copaiba is held at 65 cents in 1,000 pound lots. Paints are firm. Window glass is scarce, especially the small sizes.

| | | |
|---|---|---|
| Acid, Citric | lb. | 65 @ 70 |
| " Tartaric | " | 55 @ 60 |
| Aloes | " | 18 @ 50 |
| Amm., Carbonate | " | 25 @ 28 |
| " Muriate | " | 15 @ 16 |
| Bleaching Powder | " | 4 @ 5 |
| Blue Vitriol | " | 10 @ 12 |
| Borax | " | 11 @ 12 |
| Camphor | " | 35 @ 38 |
| Cantharides | " | 1.50 @ 1.60 |
| Cassia | " | 25 @ 30 |
| Castile Soap | " | 9 @ 18 |
| Chamomile Flowers | " | 35 @ 40 |
| Cinchonidia, oz. bots | oz. | 1.00 |
| Cloves | lb. | 55 @ 58 |
| Cream Tartar (pure) | " | 38 @ 40 |
| Cubebs | " | 28 @ 30 |
| Cuttle Fish Bone | " | 27 @ 30 |
| Ergot | " | 85 @ 1.00 |
| Ginger, Afr | " | 10 @ 15 |
| " Jam | " | 25 @ 30 |
| Glycerin | " | 20 @ 85 |
| Insect Po | " | 70 @ 75 |
| Iodine, Resub | " | 6.50 |
| Ipecacuanha Po | " | 1.75 |
| **Mercurials**— | | |
| Blue Pill | " | 50 |
| Calomel | " | 75 |
| Corrosive Sub | " | 65 |
| Mercurial Oint | " | 45 @ 55 |
| Red Precipitate | " | 85 |
| Morphia Sul. P. & W. ⅛ oz. | | 4.10 |
| Nutmegs | lb. | 1.10 |
| Oil, Anise | " | 3.15 @ 3.25 |

| | | |
|---|---|---|
| Arnica Flowers | lb. | 22 @ 25 |
| Assafœtida | " | 28 @ 30 |
| Balsam Copaiba | " | 70 @ 75 |
| " Tolu | " | 1.00 @ 1.10 |
| Bees-wax | " | 32 @ 33 |
| Oil Bergamot | " | 3.40 @ 3.60 |
| " Cassia | " | 1.65 @ 1.75 |
| " Castor | gll. | 92 @ 1.00 |
| " Lemon | lb. | 3.40 @ 3.60 |
| " Olive | gll. | 80 @ 3.50 |
| " Pennyroyal | lb. | 1.50 |
| " Peppermint | " | 3.15 @ 3.25 |
| " Sperm (pure) | gll. | 1.35 @ 1.45 |
| " Wintergreen | lb. | 3.00 @ 3.25 |
| " Roses | oz. | 5.00 @ 8.50 |
| Opium | lb. | 5.40 @ 5.50 |
| Pepper, Cayenne | " | 28 @ 30 |
| Potass., Bromide | " | 38 @ 40 |
| " Chlorate | " | 22 @ 25 |
| " Iodide | " | 4.85 @ 5.00 |
| Quicksilver | " | 63 @ 65 |
| Quinine, P. & W., 1 oz. btls. | | 2.55 @ 2.60 |
| Salicin, 1 oz. vials | oz. | 45 @ 50 |
| Santonin, 1 oz. vials | " | 75 @ 80 |
| Seed, Canary | lb. | 5 @ 6 |
| " Hemp | " | 5 @ 6 |
| Senna | " | 18 @ 25 |
| Seneka Root | " | 85 @ 1.00 |
| Shellac | " | 45 @ 55 |
| Soda, Bicarb | " | 4 @ 6 |
| " Sal | " | 1¾ @ 3 |
| Squills | " | 14 @ 16 |
| Sugar, Lead, white | " | 20 @ 22 |
| Tonqua Beans, Angostura | " | 1.85 |

# THE PHARMACIST.

VOL. XIII. CHICAGO, FEBRUARY, 1880. No. 2.

## SELECTIONS FROM FOREIGN JOURNALS.

BY ADOLPH G. VOGELER, PH. G.

**DETERIORATED FLOUR MAY BE DETECTED** by adding a solution of violet anilin of the strength of writing ink. When the flour is in such a stage that it will cohere when pressed in the hand it readily absorbs the violet dye, whereupon the starch granules as disrupted by germination can be plainly discovered. Good flour is colored but very little.—*Ind. Blaett., Vol. XVI., No.* 39, *from Zeitshcr. f. Anal. Chem.*

**THE ACTIVE PRINCIPLE OF INSECT POWDER.**—G. Dal Sie feels confident the activity of pyrethrum may be ascribed to a volatile acid isolated by him from an ethereal extract. The author continues his investigations.—*Zeitschr. oest. Apoth. Ver.*, 1879, *No.* 26.

**PERCHLORIC ACID, A NEW REAGENT FOR ALKALOIDS.**—G. Fraude reports that the above acid will produce characteristic color reactions with various alkaloids, instancing aspidospermin, strychnin and brucin. —*Chem. Zeitg., Vol. III., No.* 42, *from Ber. Deut. Chem. Ges.*

**MEL DEPURATUM.**—The following modification of the process for clarifying honey, first recommended by Dr. Mohr, is advocated by C. Bourquin. Take of crude honey diluted with an equal weight of water 10 kilograms, and add of tannic acid 0.15 to 0.25 grams, and from 10.0 to 15.0 grams of Irish moss, and heat the mixture rapidly on a steam bath. In ten minutes frequently the honey has become perfectly clear, all impurities floating on the surface with the carrageen in shape of agglutinated masses, which may then be readily removed by means of a ladle or by straining. Filtering becomes entirely superfluous. In order not to expose the honey any longer than necessary it is advisable to evaporate not more than two liters at a time. This will yield a honey of unexceptional quality as regards appearance, taste, and perfect freedom from tannin, any excess of the latter uniting with the carrageen.—*Pharm. Zeitg.*, *Vol. XXIV.*, *No.* 80.

SODIUM BENZOATE.—To prepare this new aspirant for recognition extemporaneously Hager recommends the following procedure: Triturate together 15.0 of benzoic acid and 10.5 of sodium bicarbonate; then dissolve this mixture in 70.0 of boiling distilled water, adding only small quantities at a time. Render the solution perfectly neutral by the addition of acid or alkali. When cold, filter and add sufficient water to make the whole weigh precisely 100.0, when 5 parts of this solution will represent 1 part of crystallized sodium benzoate.—*Pharm. Centralh.*, 1879, *p.* 307.

HAIR REGENERATOR.—Schmitz, after him, Schueller, reports that pilocrapin injected into the scalp in diaphoretic doses will cause a new growth of new hair to appear on bald spots.—*Ibid.*, *p.* 400.

BROMINE AND CANE SUGAR.—Chlorine, when acting upon cane sugar, generates gluconic acid, $C_6H_{12}O_7$. Griesshammer, investigating the action of bromine on sugar, has found that the same compound is formed, two equivalents of bromine reacting with one of sugar. Gluconic acid may easily be separated with zinc carbonate. Besides the body mentioned there are present a carbohydrate resembling fruit sugar, and a gummy substance. The liquid has a reddish yellow appearance and a strongly acid reaction, but does not decompose a solution of copper.—*Arch. f. Pharm.* (15), 193.

IS PHOSPHORUS A COMPOUND BODY?—Lockyer, addressing Dumas, says: "I hope the subsequent experiments will suffice to prove the compound nature of phosphorus. 1. When phosphorus is heated in a tube in contact with copper a gas is produced exhibiting a plain spectrum of hydrogen. 2. Phosphorus heated by itself in a tube deprived of air by a Springel pump gives nothing. 3. At the negative pole of a similar tube phosphorus gives rise to a gas having a spectrum of hydrogen, which, however, is not $PH_3$."—*Chem. Zeitg.*, *Vol. III.*, *No.* 44, *from Compt. Rend.*

Scandium.—The *Moniteur Scientifique* recalls to mind the highly interesting fact that the Russian chemist Mendeleff a number of years ago asserted the existence of an undiscovered element on theoretical grounds. This hypothetical element he termed Ekaboron, predicting the following properties, which are now found to attach to the newly-discovered metal, scandium. "Ekaboron forms but one (sesqui-) oxide, a base stronger than alumina, but weaker than magnesia. This oxide is insoluble in alkalies, its salts are colorless, and give gelatinous precipitates with potassa, and with sodium bicarbonate; water decomposes the protochloride, liberating hydrochloric acid. The oxide cannot be liquefied, and dissolves with difficulty in acids after ignition. The density of the oxide is about 3.5" (3.8 ascertained).—*Ibid., No.* 44.

Magnesium will decompose Carbon Dioxide when a thin wire of the metal is introduced burning into a cylinder filled with the gas. A shower of sparks emitting a brilliant white light is given off, while soon after particles of black carbon will be noticed adhering to the sides of the vessel, and magnesia accumulating at the bottom.—*Ibid., No.* 44, *from Pol. Notizbl.*

Quinia will be better tolerated by a weak stomach when administered in combination with pepsin. The various mineral acids may likewise be profitably combined.—*Pharm. Zeitg., Vol. XXIV., No.* 86.

Nitrate of Silver Spots may be removed from fabrics or from the skin by applying a solution of equal parts of ammonium chloride and mercuric chloride in ten parts of water.—*Boettg. Pol. Notizbl., Vol. XXXIV., No.* 21.

Punicin (Pelletierin).—The active principle of pomegranate bark, isolated by Tanret, has already found extensive application in France for the expulsion of tape-worm, the sulphate being exhibited in doses of 0.4 to 0.5, and the tannate about 1.5 to 2.0. The alkaloid is not at all indifferent in its action on the system, as even symptoms of intoxication have been induced by its administration.—*Pharm. Centralh., Vol. XX., No.* 44.

(*Note.*—"Punicin" certainly is the proper appellation for the active alkaloid of the above bark, as was plainly set forth by Falck, while Tanret's designation "pelletierin" should be ignored. But now, unfortunately, comes a writer for the *Chem. News*, who has separated the purple coloring principle of the purple fish, which he proposes also to call "punicin." This derivation is fully warranted; in consideration, however, of the confusion sure to arise from its adoption, and seeing that the names purpurin or phœnicin have already been pre-empted, would it not be wiser to designate the purple color "porphyrin," or "conchylin," or to compound the name of "conchpurpurin"?)

PERU BALSAM AND VASELINE.—In order to combine these two articles Hager recommends a small addition of bees-wax. Werner mentions alcohol or castor oil.—*Ibid.*, *No.* 45.

STABILITY OF HYDROGEN-PEROXIDE.—Prof. Boettger claims that, contrary to prevailing belief, this chemical will bear boiling for a considerable length of time without decomposition, and that the C. P. article, free from acid, may be preserved in cork-stoppered bottles for months without suffering deterioration.—*Ibid.*, *No.* 44.

NEW METHOD OF DETERMINING THE ALKALOIDS IN PLANTS—(A. Loesch, in *Pharm. Zeitscher. f. Russl.*)—The author describes his method, which is based on the strong affinity of alumina for coloring matter, and so forth, in the following words: A weighed quantity of the drugs mentioned above (lvs. and rt. of belladonna, lvs. of aconite, lvs. and sd. of henbane, rt. of ipecac, and cinchona barks) in coarse powder was digested in a water bath twice, for three hours each, with 90 per cent. alcohol, acidulated with H Cl.

The magma was expressed and washed out once more with 90 per cent. alcohol. Two-thirds of the combined spirituous liquors was distilled off, the residue, *after cooling*, was filtered, and the filter washed with alcohol, and then, in order to remove every trace of alcohol, the filtrate was evaporated by means of a water bath to the consistence of an extract. This residue was then heated with twice as much water containing $H_2 SO_4$ as the drug operated upon, filtered when completely cooled, and the filtrate mixed with three times its volume of a cold saturated solution of alum, and then warmed. Then ammonia was added in slight excess (to precipitate all the alumina and alkaloids present), and the whole evaporated to dryness in a water bath, and reduced to powder.

The residuum from cinchona barks was first treated with ether, then with alcohol 90 per cent.; that of belladonna, henbane and aconite was extracted with ether; and that of ipecac with 90 per cent. alcohol.

These ethereals and alcoholic solutions of alkaloids were evaporated to dryness at a temperature of 110° (C. ?) and weighed. In this manner the alkaloids were obtained as perfectly colorless crystals, leaving not a trace when heated on platinum foil. * * *

When operating on a plant not yet examined, it becomes necessary to treat the alumina precipitate successively with ether, chloroform, amylic alcohol, and finally with 90 per cent. alcohol. In this manner not only are the alkaloidal constituents obtained, but they are simultaneously separated where more than one alkaloid exists in the plant.

* * *

Many experiments performed to determine the comparative solubility of the alkaloids in various solvents have led me to the conclusion that amylic alcohol ranks first as a solvent for alkaloids in general, next in order follow ether, chloroform, and lastly coal tar benzine.

COMPARATIVE TABLE OF RESULTS OBTAINED BY DIFFERENT METHODS.

| | | Stas. | Claus. | Wagener, Husem'nn etc. | Mayer. | New Process. |
|---|---|---|---|---|---|---|
| **Calisaya Bark** | Quinia | 2·735 | 3·175 | 2·46 | 2·57 | 3·25 |
| | Cinchonia | 0·194 | 0·25 | 0·187 | 0·175 | 0·285 |
| **Cinchona Rubra** | Quinia | 1·105 | 1·195 | 1·065 | 1·005 | 1·235 |
| | Cinchonia | 0·425 | 0·5 | 0·4 | 0·395 | 0·525 |
| **Loxa Bark** | Quinia | 0·895 | 0·95 | 0·825 | 0·8 | 0·975 |
| | Cinchonia | 2·485 | 2·975 | 2·35 | 2·3 | 3·075 |
| **Henbane Lvs** | Hyoscyamin | 0·099 | 0·145 | 0·085 | 0·074 | 0·175 |
| **" Sd** | Hyoscyamin | 0·197 | 0·225 | 0·18 | 0·1 | 0·285 |
| **Belladonna Lvs** | Atropin | 0·115 | 0·197 | 0·1 | 0·09 | 0·225 |
| **" Rt** | Atropin | 0·3 | 0·325 | 0·275 | 0·225 | 0·375 |
| **Ipecac Rt** | Emetin | 0·72 | 0·8 | 0·55 | 0·475 | 0·875 |
| **Aconite Rt** | Aconitin | 0·3 | 0·395 | 0·265 | 0·22 | 0·425 |

*Pharm. Zeitg., Vol. XXIV., No.* 89.

IMPROVED TINCTURE OF LITMUS—(M. Kretschmar).—Azolitmin, to which litmus principally owes its value as an indicator, is nearly insoluble in water free from alkali, and the process is based on this property of the coloring substance. Any foreign compounds obscuring the reaction are removed, thus yielding a solution, leaving nothing to be desired in point of nicety. As comparatively many operations become necessary it is advisable to work with a rather large quantity of the crude material. Proceed as follows: Nearly exhaust finely pulverized commercial litmus with cold water, mix the percolate with very fine sand, and evaporate to dryness. During the process of concentration add hydrochloric acid from time to time, until the liquid, after the disengagement of carbon dioxide has ceased, assumes an intensely red color. The perfectly dry, brownish-looking mass is triturated, placed into a capacious plain filter, and then washed first with some hot, then with cold water, until the filtrate is clear and appears of only a faint wine red hue. Finally, dry the residue left on the filter, and preserve. To prepare the tincture of litmus, take of this azolitmin sand any convenient quantity, place in a filter, pour on the powder some hot water containing a few drops of ammonia, whereby the entire mass is colored a deep blue, and then exhaust with pure water. Then render the liquid neutral with sulphuric or phosphoric acid in the usual manner.—*Chem. Zeitg.*, *Vol. III.*, *No.* 46.

## AN ERROR IN THE LATE DISPENSATORY.

*To the Editor of* THE PHARMACIST.

In the directions for preparing Comp. Syrup Sarsaparilla, the fourteenth edition of the U. S. Dispensatory says, page 1485, fourth line from top, "and allow the mixture to stand for *twenty-four hours.*" The Pharmacopœia of 1870 says, page 296, "and allow the mixture to stand for *four days.*" The Dispensatory directs the percolation of *ten* pints of tincture ; the Pharmacopœia, *six* pints ; the Dispensatory directs evaporation to *four* pints ; the Pharmacopœia directs evaporation to *three* pints, and the addition of a pint of water. The process of the Pharmacopœia saves about a quart of alcohol, while in the evaporation of *six* pints of the tincture to *three* it is only necessary to apply sufficient heat to drive off the alcohol ; but in evaporating *ten* pints of the tincture to *four* we must apply a greater heat in order to drive off some of the water.

We hope the next Dispensatory will make the correction.

PHIL. HOGLAN.

NEW COMERSTOWN, O., Jan. 16th, 1880.

THE POETRY OF DISINFECTION.—The following touching lines are exhibited in the shop window of a well-known maker of disinfectants:

**When autumn leaves are rotting**
**And scarlet fever 's plotting,**
**Mothers and fathers recollect**
**Now is the time to disinfect.**

## CALL FOR A CONVENTION OF DRUGGISTS IN IOWA.

FORT MADISON, IOWA, Jan. 20, 1880.

DEAR SIR: In response to our circular of the 1st inst., we have received the written authority of the undersigned druggists *, who join us in asking your co-operation, and hereby call a convention of the druggists of this State, to be held at the Academy of Music, city of Des Moines, Tuesday and Wednesday, Feb. 10th and 11th. The headquarters will be at the Aborn House. Terms for members, $2 per day. Druggists on arrival will please ask for Druggists' Registry Book, and signing same will receive a badge provided by the druggists of Des Moines.

The meeting will be called to order at 10 o'clock, immediately after which the preliminaries for a permanent organization will be in order.

As the organization of a State Druggists' Association is generally called for, we append a blank form of application of membership, and which should be returned to us without delay, with statement if the subscriber intends to be present; we can then secure ample accommodations beforehand. The evening of February 10th being the occasion of a grand banquet, to be given to the Grand Lodge of the Knights of Pythias, and all invited guests, the hotels will likely be crowded, but if applications cannot be sent here before Feb. 7th it is requested that thenceforth and until Feb. 11th same be addressed to GEO. H. SCHAFER, Des Moines, Iowa, care of Aborn House.

You are cordially invited to co-operate with us and to attend on this occasion.

GEO. H. SHAFER & CO., Fort Madison, Iowa.

PHYSICIANS prescribing Chrysophanic Acid—which is now coming so largely into use in the treatment of skin diseases, especially ringworm—should warn their patients against the accident of introducing it into their eyes, through rubbing their eyes with their fingers, etc. Dilation of the pupil ensues, accompanied with intense inflammatory itching and burning, causing much pain for the few days it lasts, though the inflammation soon subsides.—*Review of Med. and Pharmacy.*

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* List of over one hundred names omitted;

## DR. PRATT'S STRUGGLE WITH A TAPE-WORM.

Having diagnosed the case, the Doctor says: I first took up "Stille's Materia Medica," and turning to the index of therapeutics, under the heading of "Tænia" I read: 'Acidum sulphuricum, æther, antimonii et potassii tartras, brayera, chenopodium, filix mas, granatum, kamala, oleum olivæ, oleum tiglii, pepo, stanni pulvis, tanacetum, turpentine."

I must confess to a feeling of faintness at sight of such long list of ammunition from which to select. To my mind this array included some articles as powerless as a blank cartridge, and others which, comparatively speaking, were like a charge of dynamite. However, I read what Stille had to say in favor of each drug, and coming down to filix mas I came across this sentence, "Male fern and its preparations are almost exclusively used for the cure of tape-worm." I kept my finger on this and finished the list. Stille's remark in regard to male fern haunted me. If this drug was used "almost exclusively" it must be the best, and if it was the best, then had I found what I was in search of. But ever careful to be in the right, I opened Ringer's Therapeutics to learn his opinion, and found "Male fern is generally considered the fittest treatment for tape-worm."

Not yet satisfied, I turned to "Diseases of the Intestines and Peritoneum," Wood's Library, and here Ransom had written, "The male fern is perhaps the oldest and most widely known vermifuge, and of late has grown into much favor." Bennett, in his Clinical Lectures, said, "Of all the vermifuge remedies proposed for the expulsion of tape-worm, I have found the male shield fern the most effectual." Speaking of this drug, Phillips (Materia Medica) wrote, "Its value in cases of tape-worm can hardly be overestimated." And Watson, in his "Practice of Physic," "But the best and most trustworthy of all, in my judgment, is male shield fern." What more could I want? All these writers pronounced the same verdict. I was satisfied, but espying Flint's "Practice of Medicine" in my book-case, I took it down, and found him testifying as follows: "The male fern is a tænifuge, the efficacy of which rests upon the testimony of many observers of large experience. In my own experience it has proved promptly efficacious." Already decided in favor of filix mas, this added testimony made me only the more firm, and I immediately resolved to clear the ground for action.

Having read in some of my books that, if I would make the result doubly sure, I must starve the patient for a few days, I put the little girl on the lightest known diet, viz.: beef tea. I at first thought of putting her on a water diet, but wishing to give the male fern a fair chance adopted the beef tea. I permitted her to have nothing else to eat for forty-eight hours, and on the evening of the second day gave the famished child a full dose of castor oil. The following morning, not allowing her any breakfast, she was given a dessert-spoonful of an equal mixture of the liquid extract of male fern and mucilage. Learning that the stomach tolerated this dose, and feeling confident that now, having followed directions to the very letter, the enemy would not be long in showing the white flag (himself), I was happy, and going to make a call on an especially aggravating chronic case I surprised this patient by my unusually jovial disposition. Returning to our little friend about four hours after the first dose was taken, and finding no apparent result, I gave a second dose, and laughing away the doubts of the parents told them to let me know when the tape-worm had passed.

In the evening the father called at the office, and said that, with the exception of one important county, the returns were all in. I told him it was most too early to expect returns from back counties. He went home. As nothing resulted from this effort, I told the parents that possibly the medicine was not quite so fresh as it might be, and they should let the child resume its regular diet, and we would try again in a few days. I also prescribed a tonic mixture, to be taken three times a day.

At the expiration of two weeks I repeated the procedure, with precisely the same result. This was certainly disheartening. The little girl looked as though, after due consideration, she had decided to keep her tape-worm. I was afraid to increase the dose, or even try again, lest I should be under the painful necessity of making an autopsy to obtain my specimen. I had lost faith in filix mas. However, I assured the anxious parents that, being satisfied the mild means we were using were not going to have the desired result, we would have to resort to something different.

Fresh pumpkins were coming into market; procuring one of these, I had a part of the seeds deprived of their outer envelope and beaten into a paste, with fine sugar. Three weeks after the last attempt, the child was permitted to eat as much of this paste as it could be induced to take, without any previous preparation whatever. The day following I received word from the mother that the worm was being passed, and wanting to know what she should do. I replied, "Let it pass." In the afternoon the father came into the office, looking pale and haggard; he seemed older by ten years than when I saw him the day before. He grasped the back of a chair for support, and appeared to be laboring under some terrible shock to the nervous system.

"Why, my dear fellow!" I exclaimed, "what is the matter; what has happened?" He raised his eyes to mine for a moment, and dropping them, said, in a voice shaking with emotion, "It is gone." "Gone!" I cried; "what, the child?" He glanced quickly up at me, and with a faint smile playing over his countenance, answered, "No, the worm."

And so it proved; the tape-worm had changed its mind, and not being pleased with its cool reception, had drawn its long chain of white links back into the child's intestines. But another hearty meal of the pumpkin seed paste brought away the intruder, head and all. And ere long, lest he should escape us a second time, we had fifty feet of tænia solium floating peacefully in equal parts of alcohol and water.—*Med. Jour. and Examiner.*

## HOW TO TEST CHLOROFORM.

The chemist, Regnauld, gives these directions for testing chloroform: Pour some of it on bibulous paper folded several times, and when nearly all evaporated observe the odor. Pure chloroform retains its mild, pleasant smell to the very last, leaving the paper dry and odorless; whereas an impure article emits a disagreeable odor, partly nauseating, partly acrid, while the paper remains somewhat moist. Chloroform of this latter description must be rejected for inhaling. 2. Free hydrochloric acid is indicated by turbidity, caused by silver nitrate, or when litmus paper is turned red. But in the presence of uncombined chlorine the test paper becomes decolorized. 3. Into a test tube place some potassium hydrate and a few drops of water. Then add one or two c. c. m. of chloroform and heat to ebullition. A yellow or brown coloration indicates aldehyde. 4. Shake together, in a test tube, equal volumes of chloroform and colorless concentrated sulphuric acid, and allow the liquids to separate. They should remain colorless. If they assume a brown or brownish-red hue, chlorinated derivatives of propylic, butylic and amylic alcohols are probably present. 5. The boiling point of pure chloroform is 60.8° C., at a barometric pressure of 0.760. When the liquid boils below this point, sulphuric ether is present; and if later on it exceeds the point, it is contaminated with other chlorine compounds. 6. C. Remy has recently fixed the specific gravity of pure chloroform at 1.500 at 15° C.—*Medical and Surgical Reporter.*

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## THE SPECIFIC GRAVITY OF CHLORINE AT HIGH TEMPERATURES.

The discovery of the relation between the density of any substance in the gaseous state and its molecular weight marks a most important era in the history of modern chemistry. When any new organic compound is prepared and analyzed, its formula is decided by finding its vapor density, which, when referred to hydrogen, must be equal to half its molecular weight. For example, the analysis of benzol gives us 12 parts of carbon to 1 of hydrogen, and we could well represent it by the formula CH; but its vapor density is 39, and the molecular weight of $C_6H_6$, or $6\times12+6=78$, which is just twice its vapor density. The proper formula is thus decided to be $C_6H_6$. The density of steam is 9, giving $H_2O$ as the formula of water; of chloroform ($CHCl_3$) is about 59.7; of alcohol ($C_2H_6O$) is 23, etc.

Sometimes it is necessary to employ a very high temperature to convert the substance into a gas, and each distinguished chemist has devised a method of his own for obtaining the vapor density; so that we now have Gay Lussac's, Dumas's, Hofmann's, Bunsen's, and last of all Meyer's. Prof. Victor Meyer, of Zurich, has applied his method to the elementary gases as well as to compounds, and some of his results were quite unexpected. Oxygen gas at low temperatures as well as high showed a density of 16, or just equal to its atomic weight, which proves that its molecule contains two atoms. Chlorine at temperatures below 600° C. has a density of 35.5, equal to its atomic weight; but above this temperature it begins to diminish, and from 1200° to 1500° C. remains constant at 23.7, or two-thirds of its atomic weight.

What does this anomaly indicate? Is chlorine an oxygen compound, as was formerly supposed; or have we assumed the atomic weight of chlorine too high? Carl and Victor Meyer, in a recent communication to the Berlin Chemical Society, decline to draw any theoretical conclusions from this fact until further experiments are made, but suggest that chlorine may be a triad, with an atomic weight only one-third of that formerly assumed, or 11.8.

The chlorine for the experiment was obtained by heating a weighed quantity of platinous chloride, $Pt_2Cl_4$, since the method employed demands the use of a solid which can be accurately weighed and the chlorine expelled by heat alone.—*Boston Journal of Chemistry.*

## MOLLISINE.

BY WILLIAM C. BAKES, PH. G.

The increasing popularity of petroleum in its various forms, as a medicinal agent, has led to the introduction of several proprietary preparations which claim to be made exclusively from petroleum. The convenience to the pharmacist of having a stable and reliable preparation of his own make to offer in place of such proprietary articles will be apparent.

Last summer my attention was called to a brief note in the *American Druggists Circular*, suggesting a formula for a substitute for *cosmolin* and *vaselin*.

I procured some of the spindle oil and made a number of experiments with various substances; paraffin did not answer a good purpose—it produced a flaky ointment, which was quite unsightly.

Yellow wax seems much better suited as a congealing substance, and I find the following to yield a nice unguent of good consistence and permanent.

The proportions are as follows: Spindle oil (Downer's), 29° gravity, 4 parts; purified yellow wax, 1 part.

Melt the wax in the oil by the aid of a gentle heat, then set aside to cool; the result is a smooth ointment readily fusible without any odor of petroleum. I have given the name of *Mollisine* to this product, from "Mollis," soft, pliant, sweet, easy, delightful, smooth, and "ine," belonging, relating or pertaining to.

This serves as an excellent base for a variety of substances, in combination with carbolic acid. I have prepared a *Carbolized Mollisine* in the proportion of 1 part carbolic acid to 16 parts of *Mollisine.*

A very satisfactory zinc ointment may be made in the usual proportions, substituting *Mollisine* for lard, and adding balsam of Peru in the proportion of 1 drachm to each ounce.—*Am. Jour. Pharm.*

## A NEW NARCOTIC.

Jamaica Dogwood, piscidia erythrina, is recommended in the *Pharmaceutical Journal* as a powerful narcotic, capable of producing sleep and relieving pain in an extraordinary manner. It has been used as an anodyne in toothache, curing the pain when introduced upon a dossil of cotton into the carious tooth. In Brazil it has an established reputation as a nervous sedative. Its action seems to be over the nerve-centers; it causes sleep without producing the cerebral hyperæmia which succeeds opium and the active principles extracted therefrom. The sleep is tranquil and refreshing; it soothes bronchial cough and moderates the paroxysm of asthma and nervous coughs. It has been used with success in chronic hepatitis and obstructions of the liver.

The idiosyncrasies encountered in many cases, in regard to the action of opium and its alkaloids, compel the profession to seek an anodyne and hypnotic in other agents. We think this remedy worthy of a trial. The fluid extract is used in doses of five drops.—*Buffalo Med. Jour.*

NITROLIN.—A new explosive compound, known as nitrolin, is compounded as follows: From 5 to 20 parts of sugar or syrup are mixed with from 25 to 30 parts of nitric acid in a wooden or gutta-percha vessel. Of this compound 25 to 30 parts are mixed with 13 to 35 parts of nitrate of potassa, and from 13 to 15 parts of cellulose.—*Chem. Centralblatt.*

# ON EXTRACTS OF MEAT.

BY ADOLPH TSCHEPPE.

Liebig's extract and the extracts from Montevideo, San Antonio (Texas), Adelaide (Australia), Fray Bentos (Uruguay), are made by extraction with cold water, and subsequent heating to the boiling point; in this way, all albumen coagulable by heat, gelatin and fat are left behind. They are, therefore, not nutrients at all, but must be considered as nervous stimulants, like tea, coffee, chocolate, brandy, and similar articles. On analysis, they will be found, on the average, to contain:

| | | |
|---|---|---|
| Dry substances | 78–85 | per ct. |
| Ashes | 15–22 | " |
| Organic substances | 50–65 | " |
| Extractive, soluble in alcohol, not less than.. | 65 | " |

Meat, freed from fat, contains:

| | | |
|---|---|---|
| Dry substances | 21.5 | " |
| Nitrogenous substances | 22.17 | " |
| Ashes | 1.20 | " |

The amount of water varies with the different extracts from 16–32 per cent.

Besides the above, there have of late appeared various other makes under different names, which claim to be an improvement, inasmuch as they are stated to contain albumen and other nutritive substances not found in Liebig's extract. On analysis, however, this was shown to be a delusive statement.

JOHNSTON'S FLUID BEEF.—The want of albumen is here supplied by the meat itself, which, after being extracted, is dried, finely ground, and mixed with the inspissated extract, so as to form a pulp. The striated muscle fibers are plainly visible under the microscope. It contains:

| | | |
|---|---|---|
| Insoluble substances, being the powdered meat. | 25.2 | per ct. |
| Soluble extract, analogous to Liebig's extract.. | 52.6 | " |
| Ashes | 12.5 | " |
| Water | 22.5 | " |

This extract contains no albumen coagulable by heat.

VALENTINE'S MEAT-JUICE.—This preparation scarcely deserves the name of an extract. It is stated to be made by partly roasting the meat, by which process the albumen coagulates, and obtaining the juice by subjecting to hydraulic pressure. It contains:

| | | |
|---|---|---|
| Dry substance | 54.40 | per ct. |
| Water | 45.60 | “ |
| Organic substances | 46.16 | “ |
| Ashes | 8.24 | “ |

This extract contains no appreciable amount of albumen coagulable by heat; by the process of roasting, a minute quantity is peptonized. Compared with Liebig's extract, it is very expensive, the price being double, and the strength less than two-thirds.

LONDON ESSENCE OF BEEF.—This cannot be understood to mean a condensation or concentration of the juices of meat, since it contains more water than the substance from which it has been prepared, and less solid substance than meat does. It forms an easily liquefied jelly, very prone to putrefy. It does not contain coagulable albumen, but the jelly does not altogether consist of gelatin, since its aqueous solution yields a precipitate on neutralization with lime water, and otherwise clearly denotes the presence of considerable quantities of syntonin (acid albumen), limited, however, by the small percentage of organic substances in this essence. It contains:

| | | |
|---|---|---|
| Dry substances | 12.20 | per ct. |
| Organic substances | 14.79 | “ |
| Ashes | 2.41 | “ |
| Extractive, soluble in alcohol | 9.00 | “ |
| Water | 82.70 | “ |

MENSMAN'S PEPTONIZED BEEF.—This preparation might be supposed to differ from the other preparations of beef, since one would infer from its name that the coagulable albumen had been converted into non-coagulable peptone. Tests fail, however, to indicate any appreciable quantity of peptone.

The peptonized beef is a turbid liquid, which after filtration has the color of blood; it yields, by heating to the boiling point, a considerable quantity of coagulated albumen. The presence of coagulable albumen and of blood is incompatible with the process of peptonization, since both of these substances are the first to be changed in their nature by the action of the acid necessary for the successful completion of the process. It contains:

| | | |
|---|---|---|
| Insoluble substances | 0.16 | per ct. |
| Albumen and coloring matter from blood | 1.20 | " |
| Dry substances, obtained after filtering off from the coagulated albumen | 4.40 | " |
| Solid substances, altogether | 5.76 | " |

—*New Remedies.*

## THE CONSTITUTION AND PROPERTIES OF DIALYSED IRON.

M. Personne, in a communication to the French Academy of Medicine, thus speaks of the constitution and properties of dialysed iron. We reprint the following from the text of the article in the *Journal de Pharmacie et de Chimie*, Oct., 1879.

The ferruginous liquor designated under the name of dialysed iron is not a true aqueous solution of sesquioxide of iron; it is nothing but a pseudo solution of modified sesquioxide of iron, which differs from the ordinary oxide in being insoluble in acids and its specific heat being less.

This particular state of sesquioxide of iron has been long known; it was discovered in the chemical laboratory of Pelouze more than twenty-five years since by Pean de Saint-Gilles, who obtained it by the action of heat upon the acetate of sesquioxide of iron. M. Bechamp obtained it afterward by the action of heat upon nitrate of iron. From that time all the physical and chemical properties of modified sesquioxide of iron have been perfectly known, and in consequence of its weak taste it has been recommended as a ferruginous medicine.

Subsequently, Graham demonstrated in his work upon dialysis that the modified sesquioxide of iron was a colloid body, that is to say, could not form a true solution, its apparent or pseudo solution not possessing the property of traversing an organic membrane. The preparation of this oxide of iron was then effected by submitting to dialysis a solution of perchloride of iron in which a great excess of sesquioxide of iron had been dissolved. The hydrochloric acid and the salts of the solution diffuse through the membrane of the dialyser, and there remains upon this membrane or septum a more or less concentrated liquor, which is nothing but the pseudo solution of sesquioxide of iron containing some perchloride of iron, which constitutes the dialysed iron of commerce. This very process of preparation proves that dialysed iron cannot pass through the membranes in the same manner as crystalloids. It contains perchloride of iron and even sulphate of sesquioxide in variable quantities. If, for example, the commercial product announced as the purest be taken, analysis indicates that it contains:

| | |
|---|---|
| Perchloride of iron | 6.75 |
| Persulphate of iron | 0.76 |
| | 7.51 |

Or 7½ per cent. of foreign bodies. It is therefore very far from being of the purity announced.

As to the properties of this dialysed iron, they are the following: it is precipitated by the more powerful acids, whether employed concentrated or diluted with water. Saline solutions, such as marine sal for instance, also precipitate it. Its insolubility in the gastric juice is complete; this I have verified with gastric juice obtained by Dr. Bochefontaine. Some was injected into the stomach of a dog in full digestion; the stomach having been opened two hours afterward, the oxide of iron was found adhering in flocculent condition to portions of undigested food, and it was impossible to detect a trace in solution in the acid liquids of the stomach or upon the whole surface of the digestive canal.

These experiments are completely in accord with the chemical properties of this modified oxide and go to confirm its insolubility. Being insoluble, it cannot be absorbed, in virtue of the old and universally true principle, *corpora non agunt nisi soluta.* Insolubility therefore implies inactivity.

This inactivity has long been recognized. In fact, at time of the discovery of the modified oxide of iron it was recommended as a therapeutic agent, the more convenient from its being devoid of the inky taste of salt of iron. But notwithstanding this it was quickly abandoned. Why did it not succeed at that time and succeed now, the compound being the same? Misleading advertisements everywhere and under every form can alone explain it.—*The Monthly Review.*

# BUTTER ANALYSIS.

### BY H. HAGER.

I. 20.0 parts of the butter to be analyzed, together with 3.0 to 4.0 parts of pure sodium chloride, are placed in a weighed glass vessel, and the whole is weighed and heated to 50°–80° C. in a water bath, when the fatty part forms a yellowish layer on the top, whilst the water casein and salt remain at the bottom. Two portions of 5.0 parts of the clear fat are placed in glass flasks of about 12.0 c. c. for further investigation, as described in III.

II. *Estimation of Moisture, Casein and Salt.*—The fat is decanted as far as possible; then 10 c. c. of warm benzine are added and gently agitated with the liquid, so as to take up the rest of the fat. The vessel is then allowed to stand in a warm place for half an hour, when the benzine is poured off and 10 c. c. more are added to remove the last traces of fat. The liquid is allowed to stand for half an hour longer in a warm place to remove the last traces of benzine, and the vessel and its contents are again weighed; this, after extracting the 3.0–4.0 NaCl added, gives the weight of the total moisture, casein and salt. The residue is then treated with hot water and filtered. The filtrate evaporated to dryness gives, after subtracting the NaCl added, the salt in the butter. The casein remains on the filter.

III. *Saponification of the Butter Fat.*—To the 5 grams of fat in the flask 20 c. c. of alcohol are added, and 10 c. c. of a freshly prepared solution of 2.0 grams of pure caustic soda in 10.0 of distilled water; the whole is then agitated and heated to 50°–60°, when the flask is corked and violently shaken. The alcohol prevents frothing. After a few moments' rest, small particles of fat are observed if the saponification is not complete. When this is the case, the flask is uncorked and again heated; recorked, wrapped in a towel, and shaken; it is scarcely ever necessary to repeat the operation a third time. The author says that it takes about 6–8 minutes for complete saponification.

IV. The warm soap solution is poured into a large beaker, and the flask washed out with 45 per cent. alcohol. The solution is then warmed without boiling, so as to evaporate as much as possible of the alcohol; 3–4 c. c. do not interfere with the following reactions. A little warm water is added, and then 20.0 of previously warmed dilute sulphuric acid (1:5 water), and stirred; water is then poured in until the level of the liquid is about 2 c. below the mouth on the beaker. After the fat has completely separated out in the water bath or other warm place, 5–0 of perfectly dry white wax or paraffin are added, heated to melting, and the whole placed in a cool place to solidify, leaving the glass rod in a beaker. The evaporation of the alcohol is necessary on account of the solubility in an alcoholic solution of the fatty acids insoluble in water.

V. As the fatty acids soluble in water require a large quantity of the latter, it is better to employ 20–28 per cent. alcohol, as it dissolves them readily without acting on the insoluble acids. After cooling, the glass rod, with the cake of fat adhering to it, is carefully lifted out, the water poured off and replaced by the alcohol described above, and the fat again put into the beaker and gently boiled for about eight minutes. After cooling, the liquid is poured off and the whole operation repeated, when all the soluble fatty bodies will have been removed.

VI. The cake is now dried by means of blotting paper, and removed from the rod into a small flat-bottomed dish, previously weighed, together with the particles of fat which may have adhered to the beaker; dried at 100°–120°, and weighed, the weight of the wax added being subtracted.

VII. It is safe to assume that butter fat contains 88 per cent. of fatty acids insoluble in water. When the amount of acid found does not exceed 88 per cent., nothing but pure butter fat is present. When it is between 88 and 89, the butter fat may have been adulterated with other fats. When this is the case, a wick should be impregnated with the fat, lighted and blown out. If the well-known smell of a tallow candle is not distinctly preceived, the butter may be considered to be quite pure. When the weight exceeds 89 per cent., the butter is certainly adulterated.—*Jour. Chem. Society.*

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PROF. T. REDWOOD, of London, is a fine looking man of about 60. Judging from his appearance, style of conversation, history, etc., we do not believe that he could be hired to certify to a falsehood, and yet he has said that Trommer's Extract of Malt is an excellent preparation.

# THE ALLEGED ANTAGONISM OF MORPHIA AND ATROPIA.

At a meeting of the Cincinnati Academy of Medicine, reported in the Cincinnati *Lancet and Clinic*, June, Dr. Comegys stated that he regarded the antagonism of these agents as established in the most marked degree. Some cases had lately come to his knowledge supporting this view. A child, suffering with some occular disease, had prescribed for it a collyrium of atropia, and iron, to be taken internally. By mistake a teaspoonful of the atropia solution was given. Symptoms of atropia poisoning soon set in; ¼ grain of morphia was injected hypodermically, and soon after another ¼ grain. The child recovered. In another case a woman took a lethal dose of atropia; the physician injected 1 grain morphia hypodermically, and the woman's life was saved. In the third case a child took a dose of morphia and was soon narcotized; ½ grain sulphate of atropia was injected subcutaneously, and this was followed by another injection of ¼ grain. The child recovered. The quantity of morphia in this last case was not exactly known, but the symptoms of narcosis were quite pronounced.

Dr. Stanton remarked upon the comparative immunity of children to the action of atropia, and their impressibility to opium. He thought that the quantity of morphia injected in one of the cases would have been fatal if it had not been preceded by the atropia.

Dr. John Davis reported the case of a man treated by him in the Cincinnati Hospital. The patient had taken one-half ounce of tincture of opium. He was treated with seven-eighths to one-quarter grain atropia, injected hypodermically every two hours; electricity was also applied. The man died; the treatment seemed to have but little influence.

Dr. W. B. Davis regarded the reports as not being sufficiently detailed. Too much with reference to this subject has been stated loosely; and the effects of other treatment employed simultaneously not sufficiently considered; in order to be conclusive, other modes of treatment should be dispensed with. The majority of the authorities capable of judging of this matter believe that the weight of evidence is opposed to the antagonism; the physiological effects of the two agents would not support the views enunciated by Dr. Comegys, and it must be recollected that in children as much as gr. j of atropia has been recovered from without any treatment. In his opinion atropia should be given in morphia poisoning only for the purpose of stimulating respiration and a failing heart, and if it fails in producing these effects it is injurious, as intensifying the narcotic influence of the opium.—*Compendium of Medical Science.*

## SELECT FORMULÆ.

**Florida Water.**—Here are two formulæ for this favorite cosmetic:

| | | |
|---|---|---|
| I. | Oil of bergamot | 4 ounces. |
| | “ lemon | 6 “ |
| | “ lavender | 1 ounce. |
| | “ cloves | 6 drachms. |
| | Alcohol (wine measure) | 3⅓ gallons. |
| | Water “ | 6 pints. |

The oils and alcohol must be mixed and allowed to stand a day or two, after which the water should be carefully added.

| | | |
|---|---|---|
| II. | Oil of bergamot | 8 ounces. |
| | “ orange | 4 “ |
| | “ lavender | 3 “ |
| | “ cloves | 1½ “ |
| | “ cinnamon (true) | ¼ ounce. |
| | Tincture of orris | ½ pint. |
| | “ Peru balsam | ¼ “ |
| | Alcohol | 4 gallons. |
| | Water | 6 pints. |

Mix, and let it remain quiet for some days before filtering and bottling.—*Boston Journal of Chemistry.*

**Antiseptic Action of Acids.**—According to Sieber, a relatively small proportion of acid, 0.5 per cent., prevents putrefaction. This property is conspicuous in the mineral acids and in acetic acid. Lactic and boric acids are much less effective.—*Journ. Prakt. Chemie.*

# ON CHLORIC ACID.

Chloric acid may be used to obtain effects for which chlorate of potassium is inert (or comparatively so), as a tonic to aid digestion, a febrifuge in fevers, and to overcome the condition called "biliousness." But, equaling all else, the use of chloric acid is in accordance with the exactness of modern methods, and the results that are thus so much more likely to be invariable. The time is near at hand when only the unscientific will administer to human beings that which is to be the least depended upon. It should only remain for us to discover how we may avoid error, and there is none greater than to depend upon the stomach as a pharmaceutical laboratory.

I have devised the following formula for the convenient production of chloric acid. The product is not chemically pure, on account of the slight solubility of the by-product, bitartrate of potassium (cream of tartar), which, according to the United States Dispensatory, is 1 part in 180 of water. This on no account can be urged as objectionable. It is to be hoped that the strength of this acid will not be arbitrarily changed by other experimentors, on account of the confusion that results from variable strengths of non-officinal preparations. It would be proper to denominate acids of the strength here given as dilute, in contradistinction to concentrated:

| | | |
|---|---|---|
| I. | Chlorate of potassium | 360 grains. |
| | Tartaric acid | 440 grains. |
| | Water | 3 fluid ounces. |

Or,

| | | |
|---|---|---|
| II. | The salt | 9 troy ounces. |
| | The acid | 11 troy ounces. |
| | Water | 36 fluid ounces. |

Or,

| | | |
|---|---|---|
| III. | The salt | 9 avoir. ounces. |
| | The acid | 11 avoir. ounces. |
| | Water | 33 fluid ounces. |

Or,

| | | |
|---|---|---|
| IV. | The salt | 288 grams. |
| | The acid | 352 grams. |
| | Water | 1080 c. c. |

Dissolve the salt in two-thirds of the water by the aid of heat. Before cooling add the acid, previously dissolved in one-third of the water. After cooling and completion of the precipitation, decant. Each fluid drachm of the finished product contains the acid of about 15 grains of chlorate of potassium. It is a heavy fluid, and presents the general appearance, taste and smell common to the dilute mineral acids. I have prescribed several gallons in doses for adults of ½ to 1 fluid drachm, largely diluted, apparently without inconvenience.

V. Dilute chloric acid,
Muriated tincture of iron,
Syrup (flavored),
} Quantities according to age of patients.

Mix, and write: Teaspoonful in water every two hours. (For diphtheria.)

| | | |
|---|---|---|
| VI. | Dilute chloric acid | 2 fluid ounces. |
| | Fluid ext. of rhubarb | 1 fluid drachm. |
| | Fluid ext. of gentian | 1 fluid ounce. |
| | Syr. to make 4 fluid ounces. | |

Mix, and write: Teaspoonful in water before meals. (Atonic dyspepsia.)

It is not necessary for me to extend the combination formulas. A great variety will doubtless be readily suggested to the prescriber.

I apprehend that there is a wide field open for investigation as to the therapeutic application of chloric acid; among other things, as to its power as an oxidizing agent within the circulation. I do not doubt that the profession will be glad to hear the result of others' experience in its use.

I am not aware that others have produced chloric acid by the formula I have given, have ever prescribed it as a medicine, or that it has ever before appeared as a subject of medical literature.—Dr. Wade, *Detroit Lancet.*

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## A STARTLING CALCULATION FOR SANITARIANS.

An esteemed correspondent writes us:

"It gave me a good deal of pleasure to read Dr. Richardson's lecture on Salutland, in your journal. I am myself somewhat of a fanatical dreamer in that direction; but statistics always come and throw cold water on my pleasant visions of a Salutland. Suppose the entire earth, with its 1,200,000,000 (is my figure right?) inhabitants, were suddenly, by some miracle, converted into a Salutland, with a death rate of only 8 per 1,000. There being then no poverty and no disease, the birth rate would, in all probability, increase; but even limiting the birth rate to 38 per 1,000, we should still have an annual increase of population amounting to 30 per 1,000, at which rate the population would double itself every 23 years. We should thus have, in

| | | | | |
|---|---|---|---|---|
| 23 | years | from now, | a population of | 2,400,000,000 |
| 46 | " | " | " | 4,800,000,000 |
| 69 | " | " | " | 9,600,000,000 |
| 92 | " | " | " | 19,200,000,000 |
| 115 | " | " | " | 38,400,000,000 |
| 138 | " | " | " | 76,800,000,000 |
| 161 | " | " | " | 153,600,000,000 |

etc., etc., etc., until there would be no more room left."—*Medical and Surgical Reporter.*

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## CRYSTALLIZED SALICYLATE OF PHYSOSTIGMINE (ESERINE).

From having observed that aqueous solutions of salicylates of alkaloids keep well, Merck, of Darmstadt, was led (*Wien. Med. Presse*) to combine the alkaloid of the calabar bean with salicylic acid. The result was favorable, as he obtained colorless shining crystals, which he had not succeeded in doing from the sulphate. They are soluble in twenty-four parts of strong alcohol and in one hundred and thirty parts of water at ordinary temperature. Dissolved in hot water, a 1.5 per cent. solution will, after cooling, keep clear for weeks. It is claimed that a solution of salicylate of physostigmine will not turn red as soon as that of the sulphate, and that the discoloration will be less intense. Its effect is also said to be fully equal to that of the sulphate, and its use attended with less pain. From these considerations, Dr. Konigstein, of Vienna, was lead to try it, applying a solution of the sulphate to one eye and one of the salicylate to the other, and from these experiments he obtained the following results:

1. That the pain attending the use of the salicylate is fully as severe as that attending the use of the sulphate.

2. That its effect on the pupil and on accommodation is less, both with regard to duration and energy.

3. That it does not keep any better than the sulphate.

The price of the salicylate is considerably higher than that of the sulphate, and as it offers no particular advantage it is not likely that it will come into universal use.—*The Medical and Surgical Reporter.*

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## NOTES AND ABSTRACTS FROM VARIOUS SOURCES.

COLD CREAM WITHOUT OIL.—A new cosmetic is now in vogue in place of the old-fashioned cold cream, which it much resembles in appearance, with the advantages of being less expensive and less liable to rancidity. Mr. E. Lebaigue gives for it the following formula:

| | | |
|---|---|---|
| Quince seed mucilage | 10 | drachms. |
| Almond oil soap | 15 | grains. |
| Stearic acid | 2½ | drachms. |
| Glycerin | ½ | drachm. |

Rub the stearic acid and the soap together in a warm mortar, add gradually to the mixture the mucilage so as to form an emulsion, and lastly the glycerin. The cream may now be perfumed with otto of rose, or any suitable essential oil.—*Druggists Circular.*

TO DISTINGUISH BUTTER FROM OTHER FATS.—Mr. W. G. Crook, bublic analyst for Norwich, England, gives the following new and simple test for butter in the *Chemical News:*

The sample to be examined (if in the form of butter) must be first melted and rendered pretty free from water and salt, by filtration if necessary; ten grains are then to be put into a test tube, and liquefied by placing the tube in hot water at about 150° Fah.; remove the tube when ready, and add thirty minims of carbolic acid (Calvert's No. 2 acid, in crystals, one pound; distilled water, two fluid ounces). Shake the mixture, and again place it in the water bath until it is transparent. Set the tube aside for a time. If the sample thus treated be pure butter, a perfect solution will be the result; if beef, mutton or pork fat, the mixture will resolve itself into two solutions of different densities, with a clear line of demarkation; the denser of the two solutions, if beef fat, will occupy about 49.7; lard, 49.6; mutton, forty-four per cent. of the entire volume; when sufficiently cooled, more or less deposit will be observed in the uppermost solution. If olive oil be thus tested, the substratum will occupy about fifty per cent.; with castor oil there is no separation. With some solid fats (not likely to be used fraudulently) no separation whatever takes place; the addition of a minute portion of alkanet root will render the reading of the scale extremely distinct by artificial light. The above method (although not intended to surpersede other processes) is capable of wide application; while the saving of a large amount of time and the reliability of its results will at once recommend it as a "first step" in butter analysis.—*Boston Journal of Chemistry.*

ZYMOTIC CONTAGION.—Professor Tyndall asserts that diseases are propagated not by effluvia or sewer gas, but by solid particles discharged into the atmosphere by currents of air or gas. This he proved by the following experiment: He cut up a piece of steak, steeped in water, heated it at a little above the temperature of the blood, then strained off the liquid; in a short time this fluid became turbid, and when examined through a microscope was found to be swarming with living organisms; by the application of heat these were killed, and when the solution was filtered he obtained a perfectly pure liquid, which if kept free from particles of dust would remain pure for an unlimited period; but if a fly were to dip its leg in fluid containing living organisms and then into the pure liquid, the whole would be swarming with animalcula in forty-eight hours.—*Scientific American.*

COPPER ALLOY THAT WILL ADHERE TO GLASS.—The following alloy, it is said, will attach itself firmly to glass, porcelain or metal: Twenty to thirty parts of finely pulverulent copper, prepared by precipitation or reduction with the battery, are made into a paste with oil of vitriol. To this seventy parts of mercury are added, and well triturated. The acid is then washed out with boiling water, and the compound allowed to cool. In ten or twelve hours it becomes sufficiently hard to receive a brilliant polish, and to scratch the surface of tin or gold. When heated it is plastic, but does not contract on cooling.—*Amer. Journ. of Industry.*

New Paint.—The danger of inhaling the vapor of turpentine has been long known, and its pernicious influence on the health is beyond all doubt, as has been verified in several cases occurring in persons sleeping in newly painted rooms, some of which have even proved fatal. Several theories, more or less plausible, have been propounded to explain the prejudicial effects of the inhalation of these vapors; but, whatever be the correct explanation, there is no doubt of the danger of occupying a room recently painted, in which turpentine has been employed, before complete desiccation has taken place. It was pointed out by the Council of Hygiene that a sudden death which recently took place in Paris was attributable to this cause, it being shown that it could not be ascribed to the lead which entered into the composition of the paint of the room in which the deceased slept; the lead, being fixed and non-volatile, cannot in these cases be accused of being the offending element.—*Boston Journal of Chemistry.*

## THE ANNUAL MEETING OF THE ROCK COUNTY PHARMACEUTICAL ASSOCIATION.

### ELECTION OF OFFICERS AND DISCUSSION OF TOPICS OF INTEREST. WORK FOR THE NEXT MEETING.

The Rock County Pharmaceutical Society held their annual meeting in this city yesterday. The meeting was called to order by W. P. Clarke, of Milton, in chair.

The roll-call showed the following present: A. H. Hollister, Madison; E. B. Heimstreet, Janesville; W. P. Clarke, Milton; W. H. Gates, Milton Junction; Dr. C. M. Smith, Evansville; R. W. Cheever, Clinton; F. F. Prentice, Janesville; A. J. Roberts, Janesville; D. C. Griswold, Evansville; W. C. Royden, Rockton, Illinois; O. L. Woodward, Clinton; W. M. Eldridge, Janesville; H. J. Dexheimer, Ft. Atkinson; J. A. Neilson, Chicago, Illinois; Will. A. Hoyt, Ft. Atkinson; E. B. Stuart, Chicago, Illinois; J. W. Groesbeck, Harvard, Illinois; L. A. Lange, Chicago, Illinois; J. X. Gardiner, Chicago, Illinois; H. C. Stearns, Janesville; C. A. Emerson, Beloit.

The minutes of the last meeting were read and approved.

Committee on Notes and Queries then made the following report:

Papers to be read at next meeting:

Furnish formulæ for Syr. Rhei et Potassa. Accepted by E. R. Smith, Beloit.

Furnish cause and remedy for precipitation of the officinal Tr. of Rhei. Accepted by W. P. Clarke, Milton.

The Syrups of the U. S. P.—is it best for the retail druggist to buy them from manufacturers, make them from fluid extracts, or manufacture them themselves from crude material? Accepted by C. A. Emerson, Beloit.

Furnish formulæ for making the best flavoring extracts with the least expense. Accepted by A. H. Hollister, Madison.

Why does the Tincts. of Bk. Cohosh and Capsicum deposit precipitate on the sides of the dispensing bottle, and how may this be remedied? Accepted by O. L. Woodward, Clinton.

Furnish standard formulæ for Elixir Lacto Peptine. Accepted by A. J. Roberts, Janesville.

Give process for removing Tannin from vegetable solutions so that iron preparations may be mixed with them. J. H. Gates, Milton.

Furnish method of detecting adulterations in the Oils of Hemlock and Origanum. Accepted by E. B. Heimstreet, Janesville.

Furnish a formula for Hair Preparation that will at the same time promote the growth of the hair and restore it to its natural color, using, as far as possible, vegetable ingredients, and leaving out entirely Ac. Lead or other injurious substances. A. H. Hollister, Madison.

Furnish best method of Pulverizing Camphor Gum and retaining in powdered form. Accepted by R. W. Cheever, Clinton.

Pharmaceutical Ethics.—Paper by F. F. Prentice, Janesville. Subject—Prescribing over the dispensing counter.

The following committees were then appointed:

Executive Committee—E. B. Heimstreet, Janesville; K. N. Hollister, Delavan; J. Copely, Edgerton; D. C. Griswold, Evansville; W. H. Gates, Milton.

Committee on Drug Market—C. A. Emerson, Beloit; A. J. Roberts, Janesville; W. C. Royden, Rockton, Ill.; S. P. Ide, Evansville; O. L. Woodward, Clinton.

Committee on Papers and Queries—A. H. Hollister, Madison; F. F. Frentice, Janesville.

Committees to report at July meeting.

Executive Committee was instructed to procure Charter for the Secretary.

The following officers were then elected:

*President*—F. S. Fenton, Beloit.

*First Vice-President*—A. H. Hollister, Madison.

*Second Vice-President*—J. Spencer Ide, Evansville.

*Third Vice-President*—W. P. Clarke, Milton.

*Treasurer*—O. L. Woodward, Clinton.

*Permanent Secretary*—E. B. Heimstreet, Janesville.

*Local Secretary*—A. H. Hollister, Madison.

Treasurer's report was read, showing the balance in Treasury.

On invitation, the Society decided to hold a two days' session, July 15th and 16th, 1880, at Madison.

On motion, the Secretary was instructed to send notices to all druggists in the State, inviting them to attend the meeting.

Papers were then read by C. A. Emerson, Beloit; Spencer Ide, Evansville; A. J. Roberts, Janesville; W. M. Eldridge, Janesville; E. B. Heimstreet, Janesville; W. C. Royden, Rockton, Ill.; A. H. Hollister, Madison; O. L. Woodward, Clinton. L. A. Lange, of Chicago, read a very interesting paper on the condition of the drug market, giving the most important changes in prices during the past year. Mr. E. B. Stuart, of *The Chicago Druggist*, made a few remarks on the use of the microscope in chemistry, which were listened to with great interest by the members present.

Mr. Stewart, who has charge of the chemical laboratory of Lord, Stoutenburgh & Co., is Secretary of the Chicago Microscopical Society, and is an expert in the use of that instrument. He exhibited a very fine microscope, and demonstrated before the Association how it can be used to excellent advantage in every-day business in detecting adulteration in drugs and chemicals, without subjecting them to chemical analysis.

The retiring President, Dr. C. M. Smith, then addressed the Society with a few well timed remarks, congratulating them on the progress made during the past year, etc.

The meeting was more largely attended than any of the previous ones, and proved of much more interest to all concerned. There was quite a display of chemicals and drugs from different houses.—*Janesville Gazette.*

# EDITORIAL.

## THE ALKALOID OF BAPTISIA TINCTORIA.

For a long time it has been suspected that the wild indigo contains a peculiar alkaloid. Recently Dr. F. V. Greene, of the U. S. Navy, submitted the plant to reinvestigation, with the result of detecting and isolating the alkaloid, which he finds to be soluble in water, alcohol, ether and ammonia, but insoluble in benzole, benzine and chloroform. The hydrochlorate crystallizes from an aqueous solution in perfect octohedra. According to miscellaneous reports, some of which seem to be credible, wild indigo is an antiseptic of considerable value. It has been used with supposed benefit in typhoid and typhus fevers, and locally in gangrene.

ALSTONIA CONSTRICTA.—Dr. Richard E. Kunze, of N. Y., in a rather lengthy article in the *Medical Tribune*, thus states the therapeutic action of this bark: "*Alstonia constricta* is slightly narcotic, cerebro-stimulant, antiperiodic, febrifugal and tonic in its action, according to the testimony of those of us who used it observingly. It must be admitted that a drug capable of producing a certain degree of cerebral inebriation or unconsiousness, call it by any name you please, is certainly possessed of narcotic properties. Nearly all the observations made in giving the powdered bark tend to confirm one important point, *i. e.*, that it produces frequently severe headache. In both cases where we exhibited the drug this condition was certainly verified. We should much hesitate to administer it to patients of a delicate and highly nervous organization. Physicians generally record such observations quite too superficially for comparative study. Dose of the powder as an antiperodic—from two to three grains every two or three hours. It should only be administered during a remission or intermission of the fever."

## NOTES AND QUERIES.

F. C. B. desires information in regard to the Cereus Bonplandi. This species of cereus is not mentioned in either Loudon or Balfour, or any work on botany in our library, but we believe the name has been used to designate a cactus similar to, if not identical with, the cereus grandiflorus, which is a fleshy, succulent, leafless, jointed, prickly stem, resembling a series of long, slender cucumbers attached end to end. These stems sometimes attain a length of fifteen feet. A tincture of this plant (four oz. of the green plant to the pint) had a spasmodic flash of popularity as a remedy for "heart disease." Whether it was best adapted to cases of hypertrophy, or atrophy, or valvular insufficiency, we believe most of the advocates of its use did not stop to inquire.

A subscriber asks for the formula of Churchill's Tincture of Iodine. Below we give the formulæ of the tincture and of Churchill's Iodine Caustic:

### CHURCHILL'S TINCTURE OF IODINE.

| | | |
|---|---|---|
| ℞ | Iodinii | ℥ 2½ |
| | Potass. Iodidi | ℥ ½ |
| | Alcoholis (75 per cent) | fl. ℥ 16 |

Mix.

### CHURCHILL'S IODINE CAUSTIC.

| | | |
|---|---|---|
| ℞ | Iodinii | ʒ 1 |
| | Potass. Iodidi | ʒ 2 |
| | Aquæ | fl. ℥ ½ |

Mix.

D., of Boston, requests a formula for *Heinck's Solution*, and adds "of what or for what I do not know."

On page 540 Griffith's Formulary we find a solution of arseniate of sodium called *Heinecke's Solution*, which is probably the formula desired. It is as follows:

℞ Arseniate of sodium, six grains.
Peppermint water, two and a half fl. ounces.

Dissolve and add to the solution,

Wine of Cinnamon, half a fl. ounce.
Laudanum, one fl. drachm.

Dose, forty to fifty drops four times a day.

W. M. E., Knightstown, Ind.—Every person using a still of any shape or size for recovering alcohol from tinctures or percolates must report the same to the Revenue Department for registration, which in the case of pharmaceutic stills costs nothing but the trouble. Using an unregistered still, no matter how diminutive it may be, is a misdemeanor punishable by a fine of about $300. Those who have used them in ignorance of the law are usually allowed to register without prosecution for their error. The Government, having received the tax on alcohol, does not aim to prevent its economical use by the manufacturing chemist, but very properly wishes to know who has the apparatus for manufacturing alcohol.

Domestic Pharmacy.—With regard to the query respecting starch polish (fol. 457), may I remark that the laundresses here rarely use wax; they simply add a piece of borax the size of a Spanish nut to each pint of hot starch. I sell pounds of it for the purpose.

Again, for plaster casts that may be washed (fol. 100), would not the coating of them with melted stearine, by immersion for a moment or otherwise, answer the purpose?

And to the already lengthy list of domestic vermifuges, may I add that half a dozen walnuts eaten in the morning, fasting, serve a good purpose. (Do not peel the kernels.)

Lastly, if you are ever in want of a cleaner and polish reviver for ornamental woodwork, Japanese inlaid ware, etc., try the following:

℞ Ol. Olives.............................................
Sp. Terebinth rect... ................................. } aa. fl. ℥ i.
Aq. Distil...............................................

Shake well together at the moment of using. This theoretically incompatible mixture answers admirably in practice.

London, Dec. 24th. J. B.

W. S. W., Ill.—We are not acquainted with all the details of electro-plating, but have found gold and silver to come down well from a solution of cyanide of potassium. Nitrate of silver may be added directly to the solution of cyanide of potassium, or better, the nitrate may be decomposed by a solution of salt and the freshly precipitated chloride of silver added to the solution of cyanide, in which it dissolves quite freely, becoming cyanide of silver. One grain of chloride of silver to six or eight grains of cyanide, or to ten grains of ferrocyanide of potassium, to one hundred grains of water, is about the right strength of bath. For gilding, about the same weight of chloride of gold and sodium should be added to the amounts of cyanide and water above mentioned. The articles to be plated must be attached to the negative pole of a battery composed of two to four cells of Smee's or Grove's battery. The positive pole should consist of a piece of the metal which is being deposited. Copper may be deposited from a slightly acid solution of sulphate of copper on brass, zinc and some other substances.

Perhaps some reader will supply us with a good process for nickel-plating.

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AN EXPENSIVE VICTORY FOR HOMŒOPATHY.—In some parts of Germany physicians are not permitted to dispense medicines when there is an apothecary in the place to do it for them. Three homœopathic physicians were practicing in Regensburg, when an apothecary of the same belief came among them and notified them to send their prescriptions to him. Two of them refused, and were brought before the court and fined about five dollars. The case was carried to a higher court, and the medicines (pellets) sent to the University of Erlangen for chemical analysis. The chemists of the university failed to find anything in them of a medicinal or poisonous nature, and so reported, whereupon the judge reversed the decision of the lower court and declared that there was no law that prevented physicians from distributing sugar-plums (*Zuckerwaaren*) as freely as they chose.—*Boston Medical and Surgical Journal.*

Some of the students of the Chicago College of Pharmacy at one time interested themselves by testing several homœopathic preparations with almost uniformly negative results. Above the third trituration even arsenic failed to respond to Marsh's test.

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THE old Quaker city, Philadelphia, which we all think of as very old and venerable and quiet, has after all a few highly enterprising inhabitants, in whom the blood seems to circulate more freely than in the average Philadelphian. In this class must be ranked John Wyeth & Brother, who have not only carved out for themselves a good reputation, but who have materially modified the condition of pharmacy by the introduction of really elegant preparations.

ARE WE POISON-PROOF, OR DO SOME CHEMISTS DRAW THE LONG BOW?—The *Boston Journal of Chemistry* is before us with three columns devoted to an exposition of the wholesale frauds practiced by the manufacturers and dealers of this city. According to these statements, largely taken from our daily papers, nearly every article of food, drink and clothing is loaded with poison. Of fourteen samples of sugar twelve were reported to contain tin chloride. Our syrups are represented to be generally composed in a large part of glucose, and to contain chlorides of tin, calcium, iron and magnesium "in quantities which made them very poisonous." Of clothing this chemist says: "I examined, I think, sixteen samples and nearly all of them were poisonous," etc., *ad nauseam.*

We use the poisonous sugars, syrups and vinegars freely, and yet, strange to say, not only continue to exist, but remain fat and hearty. In the face of all this sensational bosh about "death in the pot," *vital statistics show that the death rate in this city is smaller than that of any city of similar or greater size in the world.* From this fact we must infer that these poisons are beneficial, or that we get them in less quantities than do the inhabitants of London, Paris, Berlin or Vienna, unless it can be shown that the location and climate of Chicago are so salubrious as to more than offset the deleterious effect of the poisons.

Our daily papers are always on the *qui vive* for sensational and startling items, and unfortunately we have some chemists who sell themselves out, or give themselves away too freely, for the sake of a little ephemeral notoriety. These frightful "warnings" and "exposes" come so frequently, that the better informed of our citizens simply regard them the cry of "wolf" in the fable; but some in the city and many in the country, who do not comprehend the means and motives by which these sensational statements are produced, are afraid to risk anything handled by our merchants.

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A SHORT time since a gentleman brought into this office a package of herb having the manufacturers' name, Allaire, Woodward & Co., on it, and asked if we thought the article genuine. At first we said no, but on closer inspection reversed our decision. The truth is that the article was so much nicer than we had been accustomed to find it that at first glance we did not recognize it.

IS IT A NEW CONFIDENCE GAME?—Recently an agent has been canvassing the retail drug trade of this city and vicinity, and representing to them that, by paying to the "Chicago Bureau of Sale and Purchase" two dollars, they would be entitled at the end of each month to a rebate of 10 per cent. on all goods purchased of the wholesale druggists during the month. Several have bitten at the alluring bait, but on presenting their card, purporting to be an order by said bureau to the wholesale dealer to make the discount, were astonished to learn that the latter knew nothing about any such bureau. On looking at their card, and also at a large flashy certificate of membership given to each victim, more closely, the subscribers find that no number or location is given for the bureau, which indeed seems to be a myth. Even if the bureau has an existence, it can be of no service to retail druggists, because no wholesale druggist can afford to discount current prices so heavily; but, according to one of the rules on the back of the card, the holder loses his membership in the bureau if he attempts any purchase except "on this card."

All dealers who have entered into this scheme are said to display about their doors or windows a peculiar star (a white star within a large red star is printed on the certificate of membership), by which they may be recognized. We shall hereafter carefully avoid any store displaying this sign, because the prices of goods there must be higher than elsewhere, except to "members."

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THE STIGMATA (SILK) OF CORN AS A DIURETIC.—A Frenchman, Dr. Dufan, having discovered that the silk of maize in the form of infusion or syrup is a marvelously good diuretic in both cystic and nephritic affections, the editors of the *Louisville Medical News* thus apostrophize our great national cereal: "What a wonderful plant it is, our Indian corn! It is a true hermaphrodite, its tassel represents the male and the silk the female organs of generation. Its blades furnish a valuable fodder for our horses, its stalk-sap yields a fair molasses, its 'roas'n' ears' are the most delicious thing man ever tasted, its ripe grain furnishes innumerable forms of delightful food and the best whisky the world has ever known. How marvelous it will be should its silk yield a potent cure for the diseased kidneys and bladders of mankind!"

PROF. SHARPLES IN A NEW ROLE.—From the *New York Herald* of Jan. 10th we learn that Prof. Sharples, a milk inspector for Boston, has been engaged in furnishing the rascally milkmen of that city with recipes for coloring watered and skimmed milk, so that it would appear rich and fresh. It appears that he charged $100 for the recipe from which the "milk coloring" is made, and then $5 for telling other milkmen of whom they could purchase the stuff. Milk skimmed and badly adulterated with water was doctored according to Prof. Sharples' recipe and afterward submitted to the inspection of chemists and milk inspectors, who pronounced it pure.

CONFIDENTIAL.—This number of THE PHARMACIST will reach many who are not on our subscription list. We invite inspection, believing that patronage will ensue according to the well-established principle in business, that one cannot afford to neglect an investment which insures large dividends. The reading matter is supplied by men practically and thoroughly conversant with every phase of the drug business, and not simply by mere chemists or physicians, who are guided wholly by theories, often unwarranted, as to the real wants of the pharmaceutical profession. The subscription rate is $1.50 per year.

DO YOU WANT A COMPETENT CLERK?—At the termination of the present lecture term—about March 1st—quite a number of graduates of the College, as well as many under-graduates, will require situations. Employers can take their choice from a large number, all of whom are really very desirable. In this lottery there are no blanks; but of course some of the prizes are a little more desirable than others. Letters addressed at once to the Editor of THE PHARMACIST will be handed to the class, to be answered by those who wish to compete for the situation.

FEW, if any, wholesale drug houses in the world are larger or more complete than that of Fuller & Fuller, of this city. But for a few rivals in America this house would not indeed have a peer.

**Pocket Drug Mill for Ergot.**—Owing to the facility with which powdered ergot deteriorates, and to the ease with which it may be adulterated, a French pharmacien suggests that the accoucheur should provide himself with a pocket mill and grind out the doses he prescribes. To us the proposition seems absurd, but to Europeans, who are accustomed to seeing these little mills regularly placed upon dining tables to enable guests to grind out pure black pepper, the suggestion will appear perfectly feasible.

The country druggist who, on reading that "The Old Salamander is at home again," expects to find at the corner of Dearborn and Lake a foul, slimy den of reptiles, with the old fellow in front sunning himself, will be disappointed. On the contrary, he will walk into one of the handsomest, busiest and largest wholesale drug houses in existence.

## BOOK NOTICES.

*Year Book of Pharmacy;* comprising Abstracts of Papers contributed to British and Foreign Journals, relating to Chemistry, Pharmacy and Materia Medica, from July 1st, 1878, to June 30th, 1879, together with the Transactions of the British Pharmaceutical Conference held in Sheffield, August, 1879. Edited by Mr. Louis Siebold and Prof. Attfield. Published by J. & A. Churchill, 11 New Burlington street, London. Price 10s. 6d. ($2.63.)

This report is in many respects similar to our *Proceedings of the American Pharmaceutical Association*, but embraces many papers of European origin not noticed in our *Report on the Progress of Pharmacy*. The work is alike creditable to our British brethren and to the editors.

*Physicians' Pocket Record;* comprising a Visiting List and many Useful Tables. Devised by S. W. Butler, M.D., edited by D. G. Brinton, M.D., and published at the office of the *Medical and Surgical Reporter*, 115 South Seventh street, Philadelphia.

The fourteenth edition of this useful book is before us. It could hardly be improved in any respect.

# NAMES OF CLASS OF CHICAGO COLLEGE OF PHARMACY FOR SESSION 1879–80.

## SENIORS.

| STUDENTS. | PRECEPTORS. | STATES. |
|---|---|---|
| Campbell, W. J | J. W. Mill | Ill. |
| Coleman, J. F | W. R. Wilson | Ill. |
| Corke, G. L | Wm. Bradley | Ill. |
| Dunham, W. F | R. Stebbins | Iowa. |
| Dickinson, G. E | C. Dickinson | Ill. |
| Frerksen, Richard C | F. Liese | Ill. |
| Hiller, C. H | M. Schmeiling | Ill. |
| Hotchkiss, S. S | F. M. Goodman | Minn. |
| Jacobson, A | J. P. Lee | Ill. |
| Manns, A. G | G. Luckhardt | Ill. |
| McPherson, E. K | H. H. McPherson | Ill. |
| McDougall, Wm. G | W. H. Judson | Ill. |
| Nohe, C. J | S. M. Oliver | Ill. |
| Otto, Emil | Hy. Hautau | Ill. |
| Pearce, W. W | W. S. Pearce | Ill. |
| Pilgrim, H. C | F. M. Goodman | Ill. |
| Secord, F. H | F. G. Secord | Ill. |
| Schaller, H. C | Dr. Bluthardt | Ill. |
| Stolz, O. G | F. J. Kruell | Wis. |
| Schmidt, F. M | V. Erich | Ill. |
| Sturges, Chas. S | Pierce & Rowley | Ill. |
| Schaeffer, Paul | D. Marchand | Ill. |
| Staudt, L. C | J. N. Staudt | Ill. |
| Thiele, Emil | F. Liese | Ill. |
| Tirrell, Mrs. C | C. S. Tirrell | Ill. |
| Voegeli, F | O. W. Shultz | Wis. |
| Wyckoff, W. W | A. D. Wyckoff | Ill. |

## JUNIORS.

| | | |
|---|---|---|
| Anderson, L. K | Thos. Whitfield | Ohio. |
| Anderson, J. A | J. M. Anderson, M.D | Ill. |
| Akin, W. D | R. Braughton | Ill. |
| Barragar, W. H | H. W. C. Martin | Wis. |
| Burk, A. F | A. V. Burk | Wis. |
| Bernhard, C. H | C. H. Bacon & Co | Ill. |
| Babcock, H. C | W. H. Judson | Ill. |
| Bowen, C. F | J. Dell | Ill. |
| Bowen, L. W | E. H. Bowen | Wis. |
| Braun, W. F | F. W. Dodge | Ill. |
| Carney, M | T. Browning & Son | Mich. |

| STUDENTS. | PRECEPTORS. | STATES. |
|---|---|---|
| Carney, M. | T. Browning & Son | Mich. |
| Clark, H. T. | H. D. Garrison | Ill. |
| Cody, Wm. G. | G. & H. F. Eberle | Wis. |
| Conrad, J. | Bodemann & Zinn | Wis. |
| Denison, R. C. | R. L. Jenkins | Ind. |
| Davison, J. L. T. | T. Whitfield | Ill. |
| Engsberg, C. | B. Howe | Wis. |
| Frazier, C. | J. J. Smith | Ill. |
| Garrett, A. H. | J. F. Boal & Son | Ill. |
| Hollahan, J. L. | | |
| Henry, J. S. | Matt. Borland | Ill. |
| Hartz, Geo. H. | I. T. Bevier | Ill. |
| Hammel, Jos. | W. F. Montgomery | Wis. |
| Horn, E. A. | Story & Parker | Wis. |
| Handtmann, F. | J. J. Holtschuh | Ill. |
| Hisgen, Fred. J. | L. C. Hogan | Ill. |
| Kirchgasser, Wm. | Hy. Biroth | Ill. |
| Karpen, A. | J. G. Schaar | Ill. |
| Kephart, W. | D. W. Dougherty | Mich. |
| Knobloch, C. L. | C. F. Pfanstiel | Wis. |
| Lueder, F. | F. J. Kruell | Ill. |
| Lehn, R. O. | H. S. Maynard | Ill. |
| McCammon, S. H. | D. B. Snyder | Iowa. |
| Misenhimer, E. C. | J. B. Miller | Ill. |
| Noble, F. S. | Boyden & Martin | Wis. |
| Ohlendorf, H. L. | G. Dunkel | Ill. |
| Pickering, C. E. | D. Z. King | Iowa. |
| Prince, M. M. | P. H. Goll | Ill. |
| Payne, J. A. | Kester & Shaver | Ill. |
| Ray, C. R. | J. Lewis | Ill. |
| Rosch, J. | Otto Peuser | Ill. |
| Riegner, L. | J. Schulz | Wis. |
| Spradling, B. T. | C. H. Weston | Ill. |
| Schockey, W. L. | S. L. Brice | W. Va. |
| Schultz, A. W. | G. & H. F. Eberle | Wis. |
| Sanford, M. E. | Robt. Parham | Col. |
| Schaar, Chas. L. | Aug. Franck | Ill. |
| Schaeffer, E. | O. S. Chase | Wis. |
| Sawbridge, E. | J. Walther | Mich. |
| Stiles, J. S. | A. M. Landcaster | Ill. |
| Thoma, H. F. | H. Schmidt | Ill. |
| Thumser, Wm. | H. F. Kraft | Ill. |
| Taylor, W. S. | A. L. Snyder | Ohio. |
| Vierkœtter, C. W. | Schiffbaur | Ill. |
| Wells, J. H. | J. Myers | Ill. |
| Warne, H. L. | Dr. H. Warne | Wis. |
| Westveer, E. | O. W. Shultz | Mich. |

## REVIEW OF CHICAGO DRUG MARKET.

**On account of the nearly impassable state of the roads throughout the Northwest, the wholesale drug trade has been rather light during the past month. The advances noted heretofore are generally maintained, but several articles are slightly lower. Quinine has again moved forward, and is now firm at $3.00 to $3.05. The advance is mainly due to the unusually warm weather, which has been the cause of almost as much malarious influence as is usual in the autumn. Manufacturers in this country have formed a league and are striving hard to have the duty on quinine restored, but we hope without much prospect of success.**

| | | |
|---|---|---|
| Acid, Citric | lb. | 65 @ 70 |
| " Tartaric | " | 53 @ 55 |
| Aloes | " | 18 @ 50 |
| Amm., Carbonate | " | 22 @ 25 |
| " Muriate | " | 15 @ 16 |
| Bleaching Powder | " | 4 @ 5 |
| Blue Vitriol | " | 10 @ 12 |
| Borax | " | 11 @ 12 |
| Camphor | " | 33 @ 35 |
| Cantharides | " | 1.40 @ 1.60 |
| Cassia | " | 25 @ 30 |
| Castile Soap | " | 9 @ 18 |
| Chamomile Flowers | " | 35 @ 40 |
| Cinchonidia, oz. bots | oz. | 1.00 @ 1.05 |
| Cloves | lb. | 45 @ 50 |
| Cream Tartar (pure) | " | 38 @ 40 |
| Cubebs | " | 25 @ 28 |
| Cuttle Fish Bone | " | 27 @ 30 |
| Ergot | " | 85 @ 1.00 |
| Ginger, Afr | " | 10 @ 15 |
| " Jam | " | 25 @ 30 |
| Glycerin | " | 20 @ 85 |
| Insect Po | " | 70 @ 75 |
| Iodine, Resub | " | 6.50 |
| Ipecacuanha Po | " | 1.75 |
| MERCURIALS— | | |
| Blue Pill | " | 50 |
| Calomel | " | 75 |
| Corrosive Sub | " | 65 |
| Mercurial Oint | " | 45 @ 55 |
| Red Precipitate | " | 85 |
| Morphia Sul. P. & W. ⅛ oz. | | 4.10 |
| Nutmegs | lb. | 1.10 |
| Oil, Anise | " | 3.15 @ 3.25 |

| | | |
|---|---|---|
| Arnica Flowers | lb. | 22 @ 25 |
| Assafœtida | " | 25 @ 28 |
| Balsam Copaiba | " | 75 @ 80 |
| " Tolu | " | 90 @ 1.00 |
| Bees-wax | " | 32 @ 33 |
| Oil Bergamot | " | 3.25 @ 3.50 |
| " Cassia | " | 1.65 @ 1.75 |
| " Castor | gll. | 92 @ 1.00 |
| " Lemon | lb. | 3.25 @ 3.50 |
| " Olive | gll. | 80 @ 3.50 |
| " Pennyroyal | lb. | 1.50 |
| " Peppermint | " | 3.15 @ 3.25 |
| " Sperm (pure) | gll. | 1.35 @ 1.45 |
| " Wintergreen | lb. | 3.00 @ 3.25 |
| " Roses | oz. | 5.00 @ 8.50 |
| Opium | lb. | 5.40 @ 5.50 |
| Pepper, Cayenne | " | 28 @ 30 |
| Potass., Bromide | " | 38 @ 40 |
| " Chlorate | " | 22 @ 25 |
| " Iodide | " | 4.85 @ 5.00 |
| Quicksilver | " | 63 @ 65 |
| Quinine, P. & W., 1 oz. btls. | | 3.00 @ 3.05 |
| Salicin, 1 oz. vials | oz. | 45 @ 50 |
| Santonin, 1 oz. vials | " | 75 @ 80 |
| Seed, Canary | lb. | 5 @ 6 |
| " Hemp | " | 5 @ 6 |
| Senna | " | 18 @ 25 |
| Seneka Root | " | 85 @ 1.00 |
| Shellac | " | 55 @ 60 |
| Soda, Bicarb | " | 4½ @ 6 |
| " Sal | " | 1¾ @ 3 |
| Squills | " | 14 @ 16 |
| Sugar, Lead, white | " | 20 @ 22 |
| Tonqua Beans, Angostura | " | 1.85 |

# THE PHARMACIST.

VOL. XIII. CHICAGO, MARCH, 1880. No. 3.

## THE CONSERVATION OF CORPSES.

TRANSLATED BY ADOLPH G. VOGELER, PH. G.

Prof. Wickersheimer, præparator at the anatomic-zootomic collection of the Royal University at Berlin, has invented a new method for the preservation of corpses, cadavers, plants, or of portions of the same. W. having been persuaded by me to relinquish his claims on his patent right granted for the German empire, his process is herewith made public, with the understanding that any one within the domain of the empire is at perfect liberty to put it to use at pleasure. (The process has also been patented in France, Russia, England, United States, etc.—A. G. V.) The method is described in the letters patent as follows:

I prepare a liquid, with which I impregnate the substance to be preserved, or in which it is immersed, according to circumstances. Human corpses and those of animals thus treated will retain their form, color and plasticity unaltered. After the lapse of years they may be subjected to either scientific or criminalistic dissections; putrefaction as well as all unpleasant odors dependent thereon are effectually prevented; sections of muscles will exhibit the same properties as in fresh cadavers; preparations of separate parts, such as skeletons, lungs, intestines, and other soft organs, retain their softness and pliability, so that the lungs, bladders, etc., may even be inflated;

*Announcement in the *Deutsche Reichs Anzeiger*.

bugs, crabs, worms, etc., remain movable without their intestines being extracted; when so desired the colors of both animal and vegetal substances may be preserved intact.

The conserving fluid is prepared as follows: Dissolve 100.0 alum, 25.0 table salt, 12.0 saltpetre, 60.0 potassa and 10.0 arsenious acid in 3000.0 boiling water. Filter the cold solution, which should be neutral, colorless and odorless, to every 10 liters of which add 4 liters of glycerin and 1 liter of methylic alcohol.

The process in general for peserving human and animal cadavers of every description, and plants as well as parts thereof, consists in saturating these bodies with the above liquid. Individual cases, however, are treated in diverse ways, as already remarked, according to the nature of the body and the object in view. If preparations, animals, etc., are intended to be kept in a dry state they are immersed in the liquid for from six to twelve days, according to their volume, when they are removed and allowed to dry in the air. The tendons of skeletons, muscles, crabs, bugs, etc., will then remain soft and pliable, so that all the natural movements may be performed. Hollow organs, such as the lungs, intestines, etc., must be filled with the preserving fluid previous to their immersion. When removed and freed of their contents it is well to inflate them. Smaller animals, as, for instance, frogs and lizards, or vegetals, the colors of which it is important to preserve unchanged, must not be dried, but they are kept permanently submerged under the liquid.

When corpses or animal cadavers are to be kept for any length of time before utilizing them for scientific purposes, simple injection with the liquid will suffice, 1½ to 5 liters being consumed, the quantity depending on the size of the object. In that case, even after years, the muscles will look exactly as in recent corpses. Although corpses thus injected will eventually lose their fresh appearance, and the epidermis darken somewhat, yet this result may be obviated by washing the entire surface with the fluid and then hermetically encasing the body. The latter process is advisable where dead men's bodies are to be exposed publicly for some length of time, as in that case they will not show that ghastly repulsive appearance, their features and color remaining unchanged and fresh; nor will they exhale a trace of disagreeable smell. For real embalming, I first inject the body; then I immerse the same for several days; wipe it after removal from the bath; then wrap it round with sheets of linen or oil-cloth dipped into the fluid; and finally preserve it in air-tight cases. The treatment of different cases may vary, but the composition of the conserving fluid always remains constant.

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## PHARMACY IN EGYPT.

CAIRO, EGYPT, Jan. 16th, 1880.

FRIEND WHITFIELD: As I have promised you to let you know what your brethren in pharmacy are doing this side of the water, we will take an imaginary walk among the drug stores of Cairo. At this time of the year the Mediterranean sea is usually tempestuous, and passengers on the steamers crossing over from Europe are apt to be affected thereby. I don't mean to say they get seasick; of course not; but the stomach gets out of order, you know, and it may take several days, in spite of all the bitters, cocktails or seltzers you can take, to get in order again. But you take all you can get; if one remedy does no good, try another, until your stomach actually recovers in spite of all the abuse you have subjected it to. My experience is, to let it alone; give it rest, and when you feel dry take a mouthful of lemonade or seidlitz water, or other saline effervescent. To obtain the latter you must go to a drug store. You ask the hotel clerk to direct you to the nearest drug store. The hotel clerk is, most likely, a Swiss, and speaks the language of his own country as well as English, which he has acquired through the frequent intercourse with English speaking travelers; in fact, he tells you that he speaks English "very goot," and will listen to all you have to say. Now you want the effervescent. If you are an Englishman, you will ask him to direct you to the chemist's; but if you are an American, you will ask to be directed to a drug store. Now, the porter, who speaks English very good, may have a different conception of a drug store from what you have. He will argue "a drug store is a store where drugs are sold, and a store is here called a bazaar," hence you want to be directed to the drug bazaar. The porter calls an Arab boy, to whom he says something you do not understand. The boy replies "all right;" and motioning to you, says: "Master, come."

You follow that Arab through a maze of dirty, dark, crooked, narrow lanes, where you see strange and curiously dressed people making and selling objects equally strange and curious. The Arab suddenly stops and says: "Master, here." In front of you sits an Arab on a low bench, placed outside the house. In a recess in the wall, about three to four feet deep, and not much more in width, are shelves of bottles containing oils and balsams. Next to this niche in the wall, or next door, as you would say, there is another similar dry goods box, fitted up with shelves and bottles; next door, another. You look on the opposite side of the street, which is about eight feet wide between the houses, and you see more of these boxes of shelves with bottles. You are in the street of the "drug bazaars."

The Arab, seeing that you do not intend purchasing anything there, leads on farther. Now you see some more of those boxes stuck into the side of the house, the floor of the box usually about two feet from the ground. If the box is large enough, say three feet deep by four feet in width, the proprietor of that drug store may be squatted on a rug on the floor of his shop, smoking his pipe or sipping his coffee, apparently not caring whether he gets a customer or not. Upon his shelves are few or no bottles, but roots, barks, herbs and gums. As you are not in need of gum or balsam, for either external or internal use, you purchase nothing here. The Arab leads you on through these lanes crowded with carts, camels, donkeys, water carriers and peddlers of various wares, whose cries, together with the scenes around you, make you feel as if you had got to Babel. About this time you begin to think there has been some mistake about that drug store. You endeavor to explain to the Arab what you want by placing your hand over the stomach; make a face as if you felt sick; tell him you feel bad there where you have placed your hand, and want something to cure it. The Arab's features brighten; he seems to have comprehended your desire, and again repeats the stereotype, "all right, master; come." You follow through several windings of narrow dirty alleys called streets, lined on either side by those dry goods boxes, set on benches, called bazaars. You see no more bottles of oils nor roots and herbs; the whole street is devoted to the sale of beads and trimmings. Taking another turn in the street, you suddenly find yourself in a dark court, in which are the bazaars for slippers. It takes a long time to reach that "drug store." Emerging again into daylight, turning another corner, you find yourself opposite to a large building ornamented with horizontal stripes of red and white. The Arab motions you to enter. At a little distance from the entrance the hall is obstructed by a low wicket, as if it were intended to keep the babies out. A motion from the Arab tells you to wait there. Presently another turbaned individual appears, with a pair of straw baskets, which he puts upon your feet like overshoes, and beckons you to follow. Soon you find yourself in a large vaulted space, in the center of which is a sarcophagus, with inscriptions of gold and colored Arabic characters. You begin to think your guide has again failed to comprehend your wish, but before you have time to express your thoughts to him he volunteers to inform you that "this is the tomb of Sultan Kalaun," who was also a great medicine man. "Ah!" you think, "I am right, after all," upon hearing the word "medicine." "The great Kalaun has left his drug store here in the hands of his successors." Your thoughts are again interrupted by the Arab, who, pointing to a niche in the wall, says: "There is Mecca." You look and observe an outer and larger arch supported on pillars of porphyry, an inner and smaller arch supported on pillars of a dark green stone, which the guide explains were brought from Mecca, and that "if you are bad in the stomach" these pillars are good for it. All you have to do is to lick the pillar seven times with your tongue. The best time is in the morning, before breakfast. Either pillar will do; but if you lick them both it will do twice as much good as if you licked only one.

Although you have not yet obtained and taken the seidlitz powders, there may be a slight effervescence of temper, and just at that moment you may. feel more like "licking" that Arab than licking the pillars from Mecca.

We will now take a walk through the principal street of the city. It is about thirty-five feet wide, not paved, but can boast of a sidewalk about two and a half feet wide in some places. It is called "the Muski." The odors there are not musky; some are savory, some otherwise, especially the latter. Presently you see a sign, "Farmacia Nazionale," over a little store with a frontage of about twelve feet and a depth of about ten feet. The store is fitted with shelves, upon which are placed bottles with familiar names upon them. "Surely there's a drug store after all; but it is a small place; I don't believe he has any seidlitz powders. We will go on farther." Near the post office is another store embellished with the sign "Farmacia European." The store has a front of ten feet and a depth of fifteen feet, and is neatly fitted up. Perhaps you will ask, with surprise, "Are all the drug stores as little as those we have thus far seen?" "No." We will visit some that are a little larger; but these drug stores are small because a store or space cannot be obtained in this part of the city of greater dimensions. The ordinary size of a native store or bazaar is about six feet square—sometimes larger, but frequently smaller—entirely open in front, the floor about two feet above the ground.

The pharmacists of Cairo are nearly all Europeans—Germans, French, Swiss, Italians and Greeks, the former having complete and excellent prescription stores fitted up in the style of their respective countries. Any foreigner may obtain permission through his Consul to establish a pharmacy, after having produced evidence of his competency.

Cairo, with a population of about 400,000 inhabitants, of which about 20,000 are Europeans, can boast of from forty to forty-five pharmacies, of which number about one-third are kept by natives, the balance by the above-mentioned Europeans. But few of the great mass of the native population—the more intelligent and educated—will apply to the physician for the relief of maladies. They will resort to other means, as you have seen, or more frequently let nature take its course. "Whatever Allah has seen fit to afflict them with they will not strive to rid themselves of." Hence the principal patrons of the pharmacist are Europeans, and they naturally patronize their countrymen.

The pharmacist is obliged to import everything from Europe, from his shop furniture to wrapping paper, and seldom keeps any articles except those used in sickness—no cigars, perfumery, or other toilet articles. A few proprietary preparations—mostly French—are kept by the French and Italian pharmacists.

Among the many institutions of learning established by the Government is a College of Pharmacy, having at present about fifty students. The studies are divided into two parts. Part first comprises Physics, Chemistry and Materia Medica, besides elementary courses on other subjects which are usually taught in our public schools. These preliminary studies occupy about two years, of nine months each of actual studying time. The second division comprises Practical, Inorganic and Organic Chemistry—analytical and synthetical—and Pharmacy. This will take from two to three years more before the student will be able to pass the required examination. The students are all natives, and the lectures are delivered in the Arabic language; but not a few of the students study some European language during their college term, becoming quite proficient therein.

The chemical and pharmacal laboratory is under the direction of M. Gastinel Bey, a Frenchman. All the other Professors are native Arabs educated in Europe. In the laboratory all the chemicals and pharmacal preparations for the Government hospitals are prepared, thus affording the students ample opportunity for practice. It is the only institution of the kind in Africa, or in the Turkish empire.

Dr. H. Tombokken.

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## NOTES FROM CINCINNATI.

*To the Editor of* The Pharmacist.

Dear Sir: Circumstances over which I had no control having prevented my forwarding the proceedings of the annual meeting in time for the February number, I herewith present them, in connection with those of the February meeting, for publication in your valuable journal. The annual meeting was held January 14th, when the following officers were elected for the ensuing year: *President*—John Weyer. *Recording Secretary*—A. W. Bain. *Corresponding Secretary*—Louis Heister. *Treasurer*—Charles Faust. *Trustees*—R. M. Byrnes, Geo. Eger, H. H. Koehnken, J. D. Wells and John Ruppert, who is to fill the unexpired term of Louis Heister. The meeting was a very interesting one. The reports of the officers and various standing committees were very creditable, especially that of the retiring President, Mr. J. D. Wells, which contained many good suggestions for future action. At this meeting a movement was set on foot relative to removing the stamp duty on perfumeries, medicinal articles, etc., as imposed on us under Schedule A, of the Revised Statutes of the United States Internal Revenue, to which end a preamble and resolution were adopted, signed and forwarded to our Congressmen from this district, through whose intercession Congress might possibly grant our request. We anxiously expect the hearty co-operation of the various colleges in this undertaking, for we are firm believers in the maxim, "In unity there is strength."

Independent of this movement, a petition has been extensively signed by the pharmacists of this city, and forwarded to Washington, pertaining to the same object.

The February meeting was held Wednesday, the 11th instant, with a large attendance, and the deep interest taken was a marked characteristic throughout. The most noteworthy feature of this meeting was the presentation of numerous rare specimens and the remarks thereon by Prof. E. S. Wayne. The specimens were as follows: Bael fruit; Coto bark; a beautiful dried specimen of cimicifuga racemosa, with entire rhizome and rootlets attached; a fine specimen of caulophyllum thalict, also dried with entire rhizome and rootlets attached; a large specimen of berberis aquifolium, entire; bryonia alba, areca nuts, grindelia robusta; a rare specimen of India rhubarb; lactate of lime; sweet gum from liquidambar styraciflua, with specimen of the plant; chionanthin, a crystalline body obtained from chionanthus virg.; a handsome specimen of baptisin, taken from the fluid extract of baptisia tinctoria, having been deposited by long standing; a specimen of cinnamic acid, obtained from gum resin benzoin which contained no benzoic acid; a specimen of the gum resin; a specimen of hippuric acid, from Merck's benzoic acid, containing nearly ten per cent. of this acid; syrup lacto-phosphate lime that had undergone decomposition. With regard to this syrup, Prof. Wayne says that he has examined the deposit and found it to be a lactate of lime; that the lactic acid at first dissolves the phosphate of lime, and that during the decomposition the lactate of lime is formed and the phosphoric acid set free, when the syrup is no longer a solution of phosphate of lime in lactic acid, but only a magma of lactate of lime with phosphoric acid. The Professor stated that this change sometimes takes place over night. The specimen of lactate of lime crystals was obtained from a syrup that had decomposed over night. He claimed that the same change occurs in syr. lacto-phosphate iron, lactate of iron forming and separating, and phosphoric acid set free. The addition of hydrochloric acid will re-dissolve the lactate of lime or iron formed in the syrup, and when added, as recommended, does not prevent the change, but only acts as a solvent of the salts precipitated.

Hoping that I have not tested your patience to too great an extent,

I remain, with respect,

LOUIS HEISTER, *Corresponding Sec.*

## ELIXIRS.

The following formulæ will be found of service, where the pharmacist wishes to make his own preparations, and they can be relied upon, as they have all been tried and used by druggists for some time:

### COMPOUND ESSENCE OF ORANGE.

| | |
|---|---|
| Oil Orange | 2 ounces. |
| " Coriander seed | 1 drachm. |
| " Caraway seed | 1 " |
| " Ceylon cinnamon | ½ " |
| " Anise seed | ½ " |

Alcohol enough to make 10 ounces.

All the above oils should be of the finest quality and as fresh as possible, as all depends on them for delicacy of flavor.

### SIMPLE ELIXIR.

| | |
|---|---|
| Compound essence of orange | ½ ounce. |
| Alcohol | 19 ounces. |
| Water | 2¼ pints. |
| Sugar | 1¼ pounds. |
| Carbonate of magnesia | ½ ounce. |

Mix the essence with the magnesia; add water gradually in mortar; when all the water is added, filter; add alcohol and sugar and filter again.

### AMMONIA VALERIANATE.

| | |
|---|---|
| Take Valerianate ammonia cryst | 256 grains. |
| Simple elixir | 1 pint. |

Aqua ammonia enough to neutralize.

Color bright red with tr. cochineal compound.

### BEEF, IRON AND WINE.

| | |
|---|---|
| Liebig's ext. beef | 1 ounce |
| Citrate iron | 96 grains. |
| Sherry wine | 1 pint. |
| Elixir simple | 4 ounces. |
| Compound essence orange | 2 drachms. |

Water enough to make 24 fluid ounces. Dissolve the extract of beef in four ounces of water; let it stand ten hours and add other ingredients and then filter.

### ELIXIR CALISAYA BARK.

Take of moderately coarse red bark 1 ounce; add simple elixir enough to percolate 1 pint.

### CALISAYA AND BISMUTH WITH IRON.

Ammonia citrate of bismuth, 128 grains; dissolve in half an ounce of water, adding enough ammonia to make a clear solution; then add ferrated elixir of calisaya enough to make 1 pint.

### CALISAYA FERRATUM.

| | |
|---|---|
| Quinine sulphate | 5 grains. |
| Cinchonidia sulphate | 10 " |

Dissolve the alkaloids in ½ ounce of alcohol with aid of gentle heat and mix with 1 pint elixir pyrophosphate of iron, then add, if desired, caramel to color, and filter.

### CALISAYA IRON AND STRYCHNIA.

| | |
|---|---|
| Simple elixir | 16½ ounces. |
| Alcohol | 3 " |
| Cinchonia sulphate | 45 grains. |
| Quinia " | 22½ " |
| Strychnia " | 4½ " |
| Citric acid | 4½ " |
| Sugar | 4½ troy ounces. |
| Pyrophosphate iron | 180 grains. |
| Water | 5 ounces. |

Dissolve the alkaloids in alcohol with aid of gentle heat; rub the strychnia with ¼ ounce of water; dissolve the citric acid in ¼ ounce of water and add to the strychnia solution; dissolve the iron in the remainder of water; add sugar; dissolve with gentle heat; then add strychnia solution and mix; color with caramel and add simple elixir to make it measure 29 fluid ounces.

### CIT. IRON, QUININE AND STRYCHNIA.

Citrate iron, quinine and strychnia, 256 grains; dissolve in 1 pint simple elixir.

### CATHARTIC ELIXIR.

| | |
|---|---|
| Senna and Rochelle salts, of each | 2 ounces. |
| Mandrake root | ½ ounce. |
| Butternut | 1 " |
| Bicarbonate soda | 1 drachm. |
| Sugar | 5 ounces. |

Percolate with simple elixir to obtain 1 pint and 13 ounces; dissolve sugar in the percolate and filter.

### GUARANA.

Fluid extract guarana, 2⅔ ounces; simple elixir, enough to make 1 pint.

### PYROPHOSPHATE IRON.

Pyrophosphate iron, 256 grains; simple elixir, 1 pint. Mix and dissolve.

### GENTIAN AND TINCTURE CHLORIDE IRON.

| | |
|---|---|
| Tasteless tincture iron (Creuse's) | 10⅔ drachms. |
| Fluid extract gentian | 1 ounce. |

Simple elixir enough to make 2 pints.

### GENTIAN AND PYROPHOSPHATE IRON.

| | |
|---|---|
| Fluid extract gentian | ½ ounce. |
| Simple elixir | 1 pint. |
| Pyrophosphate iron | 128 grains. |

Mix, and when dissolved filter.

### ELIXIR PEPSIN.

| | |
|---|---|
| Saccharated pepsin | 256 grains. |
| Simple elixir | 15 oz. 6 dr. |
| Muriatic acid | 2 drachms. |

Let stand seven days and filter.

### PEPSIN AND BISMUTH.

| | |
|---|---|
| Wine of pepsin | 12 ounces. |
| Citrate of bismuth and ammonia | 128 grains. |
| Water | 4 ounces. |

Aqua ammonia, ten drops, or enough. Rub the bismuth with water and add ammonia to make clear solution; add the wine of pepsin, and filter.

### PEPSIN, BISMUTH AND STRYCHNIA.

| | |
|---|---|
| Take of Elix. pepsin and bismuth | 1 pint. |
| Strychnia crystallized | 2⅙ grains. |
| Citric acid | 2 " |

Dissolve in a little water and add strychnia; mix with the elixir, and filter.

### POTASSIUM BROMIDE.

In each fluid drachm of simple elixir dissolve 10 grains bromide of potassium and color with comp. tincture cochineal.

### SODIUM BROMIDE.

Same as elixir potassium bromide, using sodium bromide in place of potassium bromide.

### TARAXACUM COMPOUND (CANDIDUS).

| | |
|---|---|
| Dandelion root | 6 ounces. |
| Wild cherry | 4 " |
| Orange peel, sweet | 2 " |
| Gentian root | 1 oz. of each. |
| Cassia bark | |
| Coriander seed | |
| Licorice root | |
| Anise seed | 2 dr. of each. |
| Caraway seed | |
| Cardamom seed | |
| Simple syrup | 2 pints. |
| Glycerin | 8 ounces. |

Powder moderately fine and percolate with a menstruum of 1 part alcohol, 3 parts water, to obtain 6½ pints; mix this with syrup and after seven days filter.

### PHOSPHATE IRON, QUININE AND STRYCHNIA.

Quinia sulphate, 128 grains; dilute phosphoric acid, 1½ ounces (this acid must stand a test of mur. tincture iron without becoming cloudy when mixed in equal parts); pyrophosphate iron, 256 grains; aqua ammonia, 1 drachm; elixir enough to make 1 pint.

Dissolve the quinia in the phosphoric acid and add 7 ounces of elixir; dissolve the pyrophosphate of iron in 7 ounces of elixir, and when dissolved add 1 drachm aqua ammonia; then add that *containing* the *quinine* to the iron solution, a little at a time, giving time for the precipitate to dissolve before adding more; if not clear when all is added, mix 1 drachm ammonia with half ounce elixir and add drop by drop until clear; then dissolve 2 grains sulp. strychnia in 4 grains citric acid, by triturating with half ounce of water, and mix with the other solution and filter.

### VALERIANATE QUINIA.

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| Valerianate quinia | 256 grains. |
| Simple elixir | 1 pint. |

Color bright red with tincture cochineal compound.

### TINCTURE COCHINEAL COMPOUND.

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|---|---|
| Pow'd cochineal alum and carbonate of potassium, of each | 2 drachms. |
| Cream tartar | ½ ounce. |
| Dilute alcohol | 10 ounces. |

Macerate 24 hours; filter and add dilute alcohol through filter to make measure up to 10 ounces.

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INKS FOR WRITING ON SHEET TIN.—(1) A German pharmaceutical journal gives the following: Sulphate of copper (1 gram) is dissolved in 20 grams of water, 2 drops of hydrochloric acid are added, and enough solution of gum arabic to make the ink adhesive. This ink writes intensely black and is very durable. It must be written with copper pens. The addition of a little pyrogallic acid is advantageous, because the writing appears at once, which is not the case with the simple copper solution.

(2) The following is from *New Remedies:* A jet-black, lusterless ink, or rather varnish, for writing on sheet tin, which is absolutely insoluble in water, and dries instantly, may be prepared by dissolving shellac in alcohol (2 oz. in 1 pint), filtering with the aid of chalk, and mixing with finest lamp-black.

Incidentally it may be remarked that a turpentine solution of shellac with lamp-black produces, on drying, a *glossy* black. On the other hand, an alcoholic solution produces a perfect *dead* black, without a trace of luster.—*Boston Journal of Chemistry.*

## IMPROVED BAKING POWDER.

Baking powders, yeast powders, and other similar preparations, used for the manufacture of pastry, bread, etc., are usually compounded mainly of tartaric acid and bicarbonate of sodium, which, in some cases at least, are productive of mischief in the human stomach. Mr. G. E. Davis, of Heaton Moor, has recently patented an improvement in these compounds, which includes the use of acid phosphates of ammonium, potassium, or sodium, instead of tartaric acid, and gives the manufacturer of the bread, pastry, etc., the opportunity of adapting the resulting product of the baking powder to the constitutions of children or the stomachs of dyspeptics. Mr. Davis prefers to use the acid phosphate of ammonium, as it is more powerful in its action than the corresponding acid phosphates of sodium or potassium. In preparing the mixture for baking powders, yeast powders, or egg powders, with acid phosphates in the place of tartaric acid, other carbonates than the bicarbonate of sodium may be used. For instance, if it is desired to have phosphates of potassium remaining in the cakes, bread, biscuits, or pastry, he would use the carbonate or bicarbonate of potassium in conjunction with the acid phosphate of ammonium or other acid phosphates, and these produce a good dietetic bread; or carbonate of calcium or carbonate of magnesium may be mixed with the acid phosphate or phosphates when phosphate of calcium or phosphate of magnesium is required in the bread or other food-stuff.

For general use, the ordinary bicarbonate of sodium may be mixed with the acid phosphates, when a food-stuff will be produced from it much more wholesome than from ordinary baking powders, yeast powders or egg powders in every-day use, inasmuch as a phosphate, which medical authorities regard as an important constituent, is always left in the finished food-stuff, instead of tartrate of sodium, which is formed by the powders at present in use. The acid phosphates are made in the ordinary way, but a very economical method is to saturate a crude phosphoric acid with the base to be employed, such as ammonia, potash or soda, or their carbonates, to nutralize, and then add the necessary proportion of phosphoric acid to convert them into acid salts. This phosphoric acid may be produced by the action of a mineral acid on bone or bone-ash, or earthy phosphates, or phosphate of aluminium. There are also other ways of making the acid phosphates, such as by making phosphate of ammonium or sodium or potassium from Redonda phosphate of aluminium, and then adding sufficient phosphoric acid to convert them into acid salt. Phosphate of ammonium has also been made together with alum from Redonda phosphate by a well-known process; this phosphate of ammonium can also be converted into acid phosphate by the addition of phosphoric acid and used as aforesaid.—*Engl. Mechanic.*

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## CRYSTALLIZATION OF CARBON.

During the last week of 1879 it was announced at a meeting of the Glasgow Philosophical Society, by Mr. James Mactear, of the St. Rollox chemical works, that, after a series of careful experiments, extending over a period of thirteen years, he had succeeded in obtaining crystallized forms of carbon. "They were perfectly pure and transparent, and had all the refractive power of diamonds. They had the crystalline form of diamonds, and resisted acids, alkalies and the intense heat of the blow-pipe. They also scratched glass, and the only other tests that remained to be applied were as to whether they could scratch diamonds, or be scratched by diamonds, as to the refractive index of the crystals, and also the measurement of the angle of the crystals." He had no doubt in his own mind, and neither was there any doubt in the minds of the scientific gentlemen (Professors Tyndall and Smyth) whom he had consulted, that they were diamonds, but in the mean time he preferred to describe them as pure crystalline forms of carbon.

Specimens of these "crystalline forms" were sent by Mr. Mactear to Professor Maskelyne, of the British Museum, for examination, and the report of that expert appeared in the London *Times* of December 31st. It is exceedingly interesting, and we wish our limits permitted its publication in full. As it is, we must be content to give its main points with brief extracts.

It is a familiar fact that the diamond is the hardest of all known substances. The first test to which the Mactear crystals were subjected was rubbing them between a plate of topaz and one of sapphire. The result was that they were pulverized without scratching even the topaz. This proved conclusively that they had not the hardness of the diamond.

Again, the crystals of the diamond belong to the regular or "cubic" system, and a ray of light passing through them does not undergo what is known as "double refraction;" but the Mactaer specimens, when examined in the microscope with polarized light, "acted each and all powerfully in the manner of a birefringent crystal." This was also fatal to their claim to be ranked as diamonds.

Yet again, the diamond is pure *carbon*, and can be burnt like charcoal or anthracite, the product being carbonic acid gas. If heated sufficiently it will ignite in the air, but it burns more quickly and vividly in oxygen gas. Professor Maskelyne exposed some of the particles (the largest, by the bye, were only about $\frac{1}{50}$ of an inch in diameter) to the heat of a blow-pipe on a bit of platinum foil; but he could not make them burn, though grains of diamond dust placed beside them were easily ignited and vanished into air. The experiment was then repeated in a stream of oxygen, but with a similar result; proving that they were neither diamond nor even carbon.

The tests practically settled the question, but the Professor was not content with showing what the crystals were *not;* he naturally wanted to know what they *were*, and applied further tests for that purpose. Heating them on platinum foil with ammonium fluoride, he found that they became more minute, and a slight reddish incrustation was seen on the foil. Some of them were then put into a platinum capsule with hydrofluoric acid, and left over night. In the morning they had disappeared, having been dissolved by the acid, and a white incrustation of the resultant fluoride was seen on the capsule. "I have therefore no hesitation," says the Professor, "in declaring Mr. Mactear's 'diamonds' not only not to be diamonds at all, but to consist of some crystallized silicate, possibly one resembling an augite, though it would be very rash to assert anything beyond the fact that they consist of a compound of silica, possibly of more than one such compound." He adds:

The problem of the permutation of carbon, from its ordinary opaque black condition into that in which it occurs in nature as the limpid crystal of diamond, is still unsolved. That it will be solved no scientific mind can doubt, though the conditions necessary may prove to be very difficult to fulfill. It is possible that carbon, like metallic arsenic, passes directly into the condition of vapor from that of a solid, and that the condition for its sublimation in the form of crystals, or its cooling into crystal-diamond from the liquid state, is one involving a combination of high temperature and high pressure present in the depths of the earth's crust, but very difficult to establish in a laboratory experiment.—*Boston Journal of Chemistry.*

## COPYING PADS.

As several correspondents have made inquiries regarding the composition of the gelatine copying pad, which, under the various names of Lithogram, Polygram, Copygram, Hectograph, Copygraph, Autograph, Cheirograph, Graphotype, etc., are coming into use, we submit such information as we have been able to gather from our exchanges—chiefly the *Scientific American*, the *English Mechanic* and *New Remedies*—and such hints as come from friends who have made experiments for themselves.

The idea of using a combination of gelatine and glycerin, which forms the basis of all these pads, originated in Austria, and has been made the subject of a number of patents on both sides of the Atlantic, and in this country by Mr. J. M. Jacobs, of Montreal. It is, however, claimed—whether rightly or not we cannot say—that such a mixture is not patentable. Mr. Jacobs has taken steps towards procuring an injunction against those who have infringed the Canadian patent, and some time or other the question may be settled. It is not likely that any of our readers will enter into competition with the patentee in making pads for sale, but there are many who desire to experiment for themselves, and it is for these that the following suggestions are intended.

In using any of the subjoined formulæ, the gelatine, or white glue, should be allowed to stand with the water until softened, before heat is applied; the other ingredients may then be added, and the mixture heated in a water bath. When solution is effected, the preparation is poured into a shallow tin or zinc tray, a little larger than a page of note or letter paper, and about half an inch deep. Any air bubbles that arise on cooling must be removed. The pad may be used after standing about twelve hours.

I. 1 part glue or gelatine; 2 parts water; 4 parts common glycerin; whiting or white lead sufficient to make the mixture milky.

II. 1 part gelatine; water sufficient to soften; 10 parts glycerin.

III. 1 part white glue; 4 parts glycerin (no water).

IV. 1 part gelatine; 4 parts water; 1 part sugar; 6 parts glycerin; 2½ parts sulphate of barium. The latter should be recently precipitated by adding to a solution of a soluble salt of barium sufficient sulphuric acid, or solution of a sulphate, as that of soda, to decompose the barium salt.

For warm weather, or if the pad be too soft, a smaller proportion of glycerin may be used, or the mixture may be kept for some time in a water bath, so that the excess of water may be expelled. The same result may be accomplished by adding more dry powder, either barytes, whiting or white lead.

The ink is of no less importance than the pad, and should be very concentrated. Anilin inks are generally used, and should be strong enough to show a green luster on drying. Methyl violet has been found to answer best. Any of the following formulæ may be tried:

I. Methyl violet, 2 parts; dilute acetic acid, 2 parts; water, 4 parts.

II. Methyl violet, 1 part; alcohol, 1 part; water, 7 parts.

III. Methyl violet, R. B., 1 part; hot water, 5 parts.

IV. Acetic rosanilin boiled with alcohol until it does not run in writing.

V. Magenta, 2 parts; alcohol, 1 part; water, 8 parts.

VI. Violet, magenta, or other suitable anilin color, 5 parts; alcohol, 5 parts; mucilage of gum arabic, 5 parts; water, 35 parts. Heat together until solution is effected, and strain through flannel or cotton.

In using these inks any ordinary paper may be employed, but the writing should be allowed to become perfectly dry. The sheet is then placed, face downward, on the pad, which for the first time should have been sponged with cold water and allowed to dry, gently rubbed over with the hand so as to bring every part of the surface in contact, and must so remain for one or two minutes. On removing the sheet the ink will have been transferred to the pad, which it penetrates to the depth of perhaps one-sixty-fourth of an inch. By applying fresh sheets of paper, and rubbing gently with the hand, from fifty to one hundred copies may be made. When a thick pen and plenty of strong ink have been used the latter number may be obtained without difficulty. When the ink is exhausted it may be removed from the pad with a sponge and cold water, but it is not necessary to obliterate all traces, as when faint they are not transferred. When the pad is dry it may be used over again, and the operation may be repeated so long as the surface remains. A good pad, one-quarter of an inch thick will yield five thousand impressions. Old pads may be remelted and remoulded.—*Canadian Pharmaceutical Journal.*

## EXPERIMENTS ON DISINFECTANTS.

In a recent pamphlet by Dr. J. L. Notter, of the British army, he relates a number of experiments with various disinfectants.

The facts ascertained (*i.e.*, the results) may be thus simply stated in relation to the agents experimented with:

Carbolic acid subdued the offensive odor, while the activity of the quite free bacteria is persistent, though diminished.

Chloride of lime destroyed the putrefactive odor and the bacteria themselves, no free bacteria being visible.

Permanganate of potash (Condy) presented similar microscopic characters, but the bacteria seemed to elongate, and torulæ were developed.

The terebene preparations destroyed the odor and precipitated the bacteria in flaky masses, but left some free, isolated and almost motionless ones in the field.

Very similar characters were presented by McDougall's disinfecting liquid—the odor being affected to a very small extent, while the activity of the bacteria, though very slightly diminished, is persistent in the interspaces; while some are precipitated, others appear in the zooglœa form.

Burnett's fluid acted similarly, but a very slight odor remained.

This abstract may possibly assist medical men and others to a satisfactory choice of some disinfectant.—*Medical and Surgical Reporter.*

**Perry's Moth and Freckle Lotion** (Dr. B. C. Perry, New York).—A colorless solution with a white deposit. The solution contains .72 per cent. of corrosive sublimate and .85 per cent. of zinc sulphate; the precipitate contains mercury, lead and bismuth.—*Chandler.*

## NOTES AND ABSTRACTS FROM VARIOUS SOURCES.

THE EARTH'S DAY INCREASING.—In a recent lecture on "Eclipse Problems," Professor Charles A. Young, of Princeton, said, with reference to the observed increase in the rapidity of the moon's motion, that the discovery led at first to the opinion that the moon's orbit was growing shorter, and that ultimately the moon would come down upon us. More accurate calculation, however, shows that there is no danger of so disastrous a result. The moon is not coming nearer, but our day is growing longer, owing to the friction of the tides upon the earth's surface. The tides act like a brake, and slowly diminish the speed of the earth's rotation.—*Scientific American.*

IODIC ACID AS A TEST FOR MORPHIA.—J. Carter Bell draws attention to the unsatisfactory character of this test. It is usually quoted in text-books of analysis and of toxicology as an important test for morphia. For instance, Taylor, in his *Medical Jurisprudence*, says: "A solution of iodic acid, if mixed with its volume of sulphide of carbon, should not change the color of the latter; on adding a small quantity of these mixed liquids to morphia or its salts, either solid or in solution, the iodine is separated from the iodic acid and dissolved by the sulphide, which sinks to the bottom, acquiring a pink or red color, varying in its intensity according to the quantity of morphia present. This reaction distinguishes morphia from the other alkaloids which do not decompose iodic acid." Fresenius, in his *Qualitative Analysis*, says: "As other nitrogenous bodies (albumen, casein, fibrin) likewise reduce iodic acid, this reaction has only a relative value; however, if *ammonia* is added after the iodic acid, the fluid becomes colorless if the separation of iodine has been caused by other substances, whilst the coloration becomes much more intense if it is owing to the presence of morphia."

The author says that these statements do not agree with his experience. He finds that other substances, such as ipecac and guaiac, will produce the pink color; and also, that ammonia is *not* able to distinguish between the pink color of the morphia and that produced by other substances.

This statement may be easily verified by putting into a test tube 2 c. c. of a solution of iodic acid (one part of the acid to 15 of water), and

2 c. c. of bisulphide of carbon; to this mixture is added a milligram of hydrochlorate of morphine, and, on shaking, the beautiful pink color is communicated to the bisulphide of carbon; on adding 5 drops of ammonia, the color disappears. A few drops of ipecacuanha wine, in the place of the morphia, will produce the same result. Such a doubtful test ought to be banished from all toxicological works; or, if mentioned, should be qualified by this statement—that if no pink color is produced, the absence of morphia may be presumed.—*The Analyst.*

ALLIGATOR OIL.—Years ago alligator oil was obtained in large quantities in Florida, and was used generally for burning and lubricating purposes. The fat is principally found on the tail and around the intestines. An East Indian physician states that crocodile oil, which is probably substantially the same, contains a larger proportion of solid fat than either neat's-foot or cod-liver and other fish oils. It solidifies at the melting point of ice, while neat's-foot oil only slightly thickens and the others scarcely thicken. He also tried the softening quality of the various animal oils on leather, and on comparison found the leather treated with crocodile oil remained much stiffer than that treated with other animal oils. Whether there is any dietetic or medicinal use of alligator oil we have not heard.—*Medical and Surgical Reporter.*

ESTIMATION OF ALBUMEN IN URINE.—The estimation of the albumen is often one of the most important points in the medical examination of urine. To perform the operation accurately requires considerable experience, as it depends to a great extent on the quantity of acetic acid added to the urine before coagulation. Dr. Esbach, the principal of the laboratory of the Necker Hospital, has devised the following process for obtaining a correct result by pharmaciens or physicians to whom the examination of urine is not of daily occurrence: First dissolve 10.5 grams of picric acid in 1 liter of water. To 9 parts of this solution add 1 part of acetic acid of about 28° (the ordinary acetic acid). Filter, and preserve the mixture, which is your Picric Reagent. To examine urine for albumen, take a capsule with a flat bottom of about 9 c. m. in diameter, and put into it 20 c. c. of the Picric Reagent and 20 c. c. of the albuminous urine. If the urine appears slightly or very albuminous, use 30 c. c. or 10 c. c. of it respectively, in any case making up the liquid in the capsule to 50 c.c.

Stir with a glass rod; then transfer to a sand bath and boil for five minutes, always stirring. Carefully decant and filter through a tared filter; wash the capsule frequently with distilled water, and after carefully drying and absorbing all moisture from the filter obtain the weight of the precipitate, which will be in the proportion of 5 to 4 as compared with the ordinary coagulated albumen.—*Chem. and Drug.*

CAN A STEAM PIPE SET FIRE TO WOOD?—The *American Manufacturer* says: At the Crescent Steel Works in this city a steam pipe 2¼ inches in diameter, carrying from 90 to 100 pounds pressure, was laid under ground about three years ago, incased in common pine boards about one inch thick. A few days since occasion was had to dig up the pipe, and the whole length of the wooden drain was found to be charred and apparently burnt about three-fourths of the thickness of the wood, the other fourth being partially rotted. The whole inside of the drain was turned to charcoal, with here and there spots of white ashes, showing that ignition had actually taken place. It seems probable that if the casing had not been excluded from the air by the earth covering it, it would have blazed and been entirely consumed. It is generally believed that a steam pipe cannot set fire to wood, but this case seems to prove the contrary, and it may explain the origin of many mysterious fires.—*Boston Journal of Chemistry.*

SALICYLATE OF IRON.—Dr. Wallis White (*Glasgow Med. Journal*, Aug., 1879) prepares the salicylate of iron by dissolving together sulphate of iron 1.6 grams, salicylate of soda 2 grams, and acetate of soda 1.8 grams, in 30 grams of water. The solution has at first a pale port-wine appearance, which darkens on exposure to the air; it has a pleasant taste, and 30 grams contain 2 grams of salicylate of iron. Its primary action seems to be to promote secretion, stimulating the skin. It does not constipate the bowels, but rather corrects the alvine secretions. As a prophylactic against septicæmia after surgical operations it is valuable. It promotes perspiration, cleans the tongue, lowers the temperature, and reduces the pulse. It may be administered with freedom and in large quantities in cases of anæmia, without interfering with digestion. In skin diseases also, and in desquamative nephritis, where the digestive organs have become weakened, and a salt of iron is indicated, its powers are very marked. Salicylate of iron seems to combine the astringent powers of the iron, but in a minor degree to the sulphate or perchloride, with the antiseptic, antipyretic powers of the salicylic acid. If the preparation is long continued, some of it passes out unchanged with the urine.—*Practitioner.*

THE sulphur and paraffin method of making sulphuretted hydrogen, which has been occasionally praised as a very convenient, clean and rapid process, is not entirely free from danger. By melting together equal parts of paraffin and sulphur in a test tube it is quite true that pure sulphuretted hydrogen gas is obtained in large quantities. But, according to Wm. Johnstone, the mixture often *explodes* with more or less violence, on an average once in seven times. Mr. J. Fletcher, however, thinks he has overcome this drawback, by the addition of broken tobacco-pipe shanks.—*Chem. News.*

ON SULPHYDRIC FERMENTATION (P. Miquel).—There is a microscopic organism which has the power of causing sulphur to unite with hydrogen, producing hydrogen sulphide. This organism is found in sewage, in potable waters, and even in rain water. It attacks the insoluble albumen, slowly destroying it, and liberating most of its sulphur as hydrogen sulphide. It has the faculty of living and multiplying in a solution entirely deprived of air. This bacillus has also the power of attacking free sulphur, for if cultivated in a medium entirely free from sulphur or any of its compounds, it disengages carbonic anhydride and hydrogen; but if a little sulphur be introduced hydrogen sulphide appears.—*Journ. American Chemical Society.*

OLIVES IN CALIFORNIA.—Recently Mr. Elwood Cooper, of Santa Barbara, California, shipped to San Francisco 1,000 gallons of well clarified olive oil, the product of his orchard at Santa Barbara. According to the San Francisco *Alta*, Mr. Cooper has 6,000 trees, some of them seven years old, and these produce twenty gallons of berries, each on an average in a good year, and one gallon of oil is obtained from seven of berries. Trees ten years old in a good soil will average fifty gallons of berries in a good year, but sometimes will yield 150 gallons. After a good crop the tree usually takes a year's rest, so that its good years alternate. The whole yield from a mature orchard may be set down at 200 gallons of oil to the acre, and of this fifty gallons may be deducted to pay for gathering the berries and making and marketing the oil. The *Alta* believes that the olive should receive more attention in California, since it will bear good crops, on poor soil, with less care than any other plant. The hill-sides, now worthless, should be covered with olives. The olive requires no irrigation, grows on clayey or rocky soil without much cultivation, and begins to bear in five years, coming to full bearing in ten years.—*Scientific American.*

MEDICAL IMPUDENCE.—Referring to the Wisconsin Medical Act, which provides that if a physician write on his prescription the words "no duplicate" it shall be unlawful for any druggist to repeat the prescription so indorsed, and inflicts a fine of $10 for every occurrence of the felony, the *Louisville Medical News* hopes some day to get a similar law. There are doctors in England who would advocate it, too, if they thought they had the smallest chance of success. "Here," says the Louisville paper, "a prescription gotten on credit, and often not paid for, is used by an individual or a family indefinitely, and is besides often loaned to friends or relatives." It is curious that Americans, of all people on earth, will permit in any State or city such a custom as the one referred to. A law which should fine a man $10 for using a second time or loaning a kettle or a frying-pan would be just as honest; but it seems the ironmongers of Wisconsin have not yet had the audacity to ask for such a benefit.—*Chemist and Druggist.*

IODIDE OF STARCH AS A GENERAL ANTIDOTE IN POISONING.—The Boston *Medical and Surgical Journal*, August 21st, states that Dr. Bellini, in a paper read before the Medical Society of Florence, recommends the iodide of starch as an antidote to poisons generally. It is free from any disagreeable taste, and has not the irritating properties of iodine, so that it can be administered in large doses. He has made numerous experiments, and states, as a result of these, that at the temperature of the stomach and in the presence of the gastric juice the iodide combines with many of the poisons, forming in some cases insoluble compounds, in others soluble compounds, which are harmless, so long as they are not in too large quantity. He recommends it as safe in all cases where the nature of the poison is unknown, and as especially efficient in cases of poisoning by sulphuretted hydrogen, by the alkaloids and alkaline sulphides, by caustic alkalies, by ammonia, and especially by those alkaloids with which iodine forms insoluble compounds. In cases of poisoning by salts of lead and mercury, it aids the elimination of these compounds. In cases of acute poisoning, an emetic should be employed soon after its administration.—*Compendium of Medical Science.*

LEAD PLASTER.—Julius Müller, in the *Pharmaceutische Zeitung*, commends the following modification of the process of preparation: Melt together in a capacious copper kettle 7,500 grams of lard and 7,500 grams of olive oil, and then add immediately three liters of hot water; then stir into the mixture 7,500 grams of litharge previously completely deprived of carbonic acid by ignition (that is, until nitric acid will cause no more effervescence). Set aside over night; the following day boil the plaster over a gentle fire, as usual, but without any further addition of water, it being completed in from two to two and a half hours, and without a fault. The advantage of this procedure is that the addition of water during the boiling, so very annoying and ofttimes dangerous, is entirely avoided.—*Boston Journal of Chemistry.*

LIMITS OF THE ANIMAL AND VEGETABLE KINGDOMS.—The *Journal* of the Franklin Institute observes that Prof. Stein, in his beautiful work on the flagellate Infusoria, distinguishes the lowest animals from vegetables by the simultaneous presence of vibratile cilia, contractile cavities and a nucleus. Protozoans have all three of these organs, but he thinks this cannot be said of any vegetable. E. Maupas shows that the zoospores of two Algæ, the *Microspora floccosa* and an unclassified *Oedogonium*, have well marked nuclei, together with a cilia and contractile cavity, and concludes that neither physiology nor morphology furnishes any criterion for distinguishing animals from vegetables. Claude Bernard has established the biological unity of all living organisms, and protozoans and protophytes can only be classified by means of their tendencies and affinities.—*Medical and Surgical Reporter.*

ON THE BEHAVIOR OF GLUE AND THE CARBOHYDRATES WITH CHROMATES, UNDER THE INFLUENCE OF LIGHT (J. M. Eder).—It was found that chromic acid, in the light, forms a coagulum with glue, which dissolves on warming. Further, that glue with a bichromate, in dry condition, could be kept in the dark for a long time without change, but if moistened and heated it became insoluble. In the light, even when perfectly dry, the glue and bichromate are changed in a few seconds, the glue becoming insoluble in hot water, and the chromic acid becoming reduced to chromium trioxide. Formic acid is produced in considerable quantities by the oxidation of glue. Sugar, when mixed with a chromate, is much less sensitive to the light. The mixture loses its hygroscopic character, but not its solubility. Dextrine behaves like sugar. Albumen, with chromates, is very susceptible to the influence of light.—*Journ. American Chemical Society.*

A RACE WITH THUMBS ON THEIR FEET.—Mr. Tremlett, the British consul at Saigon, in his report this year, mentions as a remarkable peculiarity of the natives of the country that they have the great toe of each foot separated from the others, like the thumb of the hand, and it can be used in much the same manner, though not to the same extent. This distinctive mark of an Annamite is not, however, usually seen in the vicinity of Saigon, but is now confined to the inhabitants of the more northern section of the empire, where the race has remained more distinct. This peculiarity is the meaning of the native name for the Annamite race; and that the name and peculiarity are of great antiquity is shown by the mention in Chinese annals 2300 B. C. as that (or those) of one of the "four barbarian" tribes that then formed the boundaries of the Chinese empire.—*Boston Journal of Chemistry.*

AMERICAN CHEMICALS.—The Americans are beginning to be much more independent of foreign supplies of chemicals owing to the progress made in home manufactures. Not long ago 500,000 lbs. of tartaric acid were annually imported; last year they only took 188 lbs. So of citric acid, the imports have fallen from 250,000 lbs. to 27,000 lbs. Lime juice, from which the acid is made, is, however, still imported from the West Indies, owing to the small native growth of limes and lemons. It is, however, considered that the culture of these plants might be largely increased in the Southern States. Formerly from 600,000 lbs. to 1,000,000 lbs. of foreign borax were imported into North America, but last year only 3,492 lbs. were imported, the working of the native mines having fully supplied the demand. Six years ago 9,000,000 lbs. of cream of tartar were imported, and now none is taken from Europe.—*Chemist and Druggist.*

# EDITORIAL.

## SHALL THE DUTY ON QUININE BE RESTORED?

The manufacturers of quinine salts in the United States (four in number) have issued to the trade a manifesto of their grievances and an appeal for relief. The relief sought is simply a restoration of the duty on foreign quinine. While our sympathies are decidedly with free trade in quinine, and therefore with the sick, we cannot blind ourselves to the fact that our manufacturers are placed in a very awkward and unfair position as competitors. Not only is East India bark, except when imported directly, subject to a tax of 10 per cent., but alcohol is taxed about $1.70 per gallon, and fusel oil, which they have learned to employ as a substitute for alcohol to some extent, is subject to a duty of $2.00 per gallon. Another difficulty they encounter is the high price of labor and capital prevalent in this country as opposed to the low prices current in European countries.

Unless our Government is determined to destroy this branch of manufacture in this country, it must make it at least possible for it to exist. To do this the duty need not be restored on quinine, but should be removed from bark, alcohol, fusel oil, and every other element or factor involved in its manufacture. With this relief, without doubt, our manufacturers will be able to cope with the world successfully. The difference in wages and interest of capital will be more than counterbalanced by the superior energy and ingenuity of American workmen and by the use of labor-saving machinery and methods.

The removal of the tax on alcohol to be used for medicinal and manufacturing purposes is a measure which should not longer be delayed. We know how great is the revenue therefrom, but just so great is the tax on meritorious industry, a part of which falls directly upon the sick. The use of alcohol in the arts, manufactures and medicine is in no sense a luxury, but an absolute necessity, and as such should not be taxed, unless, for consistency, glass, iron, food, etc., be placed in the same category. That the people have borne this incubus so long and so patiently is due to their patriotism, and not to any intrinsic righteousness in the policy. In the present financial condition of the country there is not, if there ever was, any necessity for the revenue.

For revenue, however, as well as for the moral effect, the tax on all intoxicating beverages should remain, or even might be increased. The objection sometimes offered to this reform is that free alcohol would find its way into taxable whisky, brandy, etc.; but means can easily be devised for preventing such frauds, except perhaps to a small extent. But whoever thinks that frauds do not occur now is sadly mistaken.

## PURE FOOD AND DRUGS.

Good government means, among other things, protection of the weak, simple and ignorant against the wiles and frauds of the skillful. On this ground alone we might insist on legislation against the adulteration of food and drugs; but the case is stronger, for not only the ignorant, but all classes of society are continually endangered and actually damaged in health and purse by these practices. While the condition is by no means as desperate as sensational writers would make it appear, it is without doubt bad enough to demand a remedy; but the only remedy possible is by means of legislation creating public analysts and prescribing penalties.

It is not necessary to, and we would not favor the prevention of certain mixtures which are found to be useful, or at least not deleterious; but we would have manufacturers and dealers correctly name and label their goods. Acid phosphate of calcium is a useful substance, and so is alum, and a mixture of these bodies, with or without the addition of cream of tartar, may be very satisfactory and desirable to some persons, but it should be unlawful to palm off such a mixture as pure cream of tartar. Powdered elm for poultices is perhaps even improved by a small percentage of flour, and certainly mustard and Cayenne pepper are still strong enough for most culinary purposes when diluted with fifty per cent. of inert substances; but branding such mixtures, and charging for them as if absolutely pure, is a fraud of the same character as selling bronze for gold, or glass for diamonds, or a sick horse for a sound one. Usually consumers are able to dilute articles to suit their own notions, but in cases where useful admixtures cannot be extemporized by consumers such compounds should be correctly named and labeled.

Manufacturers of patent medicines should be compelled by law to print upon every package of medicine offered for sale in this State the composition thereof, in full or in percentage numbers. Such a regulation would do more towards abating the swindling operations now practiced in that class of goods in a month than all the harangues and anathemas of the justly indignant medical profession in a century. It would moreover make our State the banner State of the Union, and the leader of the world in the practical application of the principle that the chief end of government is the protection of the lives and happiness of the people. All really meritorious remedies can be and are now fully protected by patents, trade marks and copyrights, and yet the publication of the composition of the whole class of patent medicines would at once and forever destroy the reputation of more than ninety per cent. of the list.

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How to Give Phosphorus.—Many physicians imagine that any compound containing phosphorus will supply that element to the animal economy in an available form, and hence prescribe phosphates, phosphites, hyphosphites, phosphoric acid, etc., ignorantly presuming that the phosphorus will be detached from its combination, assimilated by the nervous system, and there finally oxidized, giving rise to nervous energy. This is a mistake. Once united with oxygen, even in small amounts, the animal organism can never appropriate the phosphorus and reject the oxygen. Hence giving phosphates with the view of obtaining the nervous energy developed by the oxidation of the phosphorus in the nervous centers, is like feeding a fire with ashes or lime-stone, with the view of obtaining heat from the oxidation of the carbon contained in these carbonates. Of all the methods devised for introducing pure phosphorus unoxidized into the nervous tissues that proposed by Billings, Clapp & Co., by which phosphorus is dissolved in pure cod-liver oil in an atmosphere of carbonic acid gas, seems to be the most rational. Their preparation, known in the trade as *Phosphorole*, contains small but definite quantities of dissolved phosphorus, which, being protected by the oil from oxidation in the stomach and even in the blood, is certain to reach the nervous tissues in its elementary form.

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## BLOWS THAT COUNT.

For several years our State Board of Health, composed of five able and honest men, has been engaged in examining applicants, registering diplomas, etc. Their first struggle with organized depravity came in a contest with those medical colleges, a dozen or so of all schools, holding two graduating terms per year. The contest, severe although brief, resulted in a signal victory for the Board. The victory is more important in its far-reaching results than could *a priori* have been expected, for every double-term medical college in the United States was forced to reform, because no school could succeed whose diplomas were not respected and recognized in this State.

Having settled the college difficulty, the Board next turned its attention to the pack of wolves known as advertising quacks or "specialists." The following extract from the records of the session of the Board, held in Chicago, February 5th, shows how the Board deliberately "sat down" on two of the most shameless of the motley crowd:

"The Bate-Osborn case was then disposed of, Dr. Gregory offering the following resolution, which was adopted:

"WHEREAS, Dr. John Bate and Dr. Edward Osborn, now holding certificates from the State Board of Health, have been found guilty of gross unprofessional misconduct in practicing medicine under the assumed and fictitious names of Dr. A. G. Olin and Dr. J. S. Carlton, and in issuing grossly unprofessional circulars and advertisements, making false, immoral and pernicious offers of medicines and medical aid, involving the commission or concealment of criminal conduct; therefore,

"*Resolved*, That the certificates heretofore granted to the said Drs. John Bate and Edward Osborn by this Board be, and the same are hereby revoked and annulled.

"Dr. Bateman offered the following, which was also adopted:

"*Resolved*, That the Board recommend to all the medical schools of this State that they make the necessary arrangements to furnish to their yearly classes a series of two or more lectures on medical ethics, setting forth the duties of the physician towards the public and also towards the members of his own profession."

The case of Dr. W. R. Lucas, *alias* Dr. Lucas R. Williams, was still under consideration when the Board adjourned for the day, with a fair prospect that he, too, will lose his right to practice in the State, a verdict richly merited by his conduct. We congratulate the Board, and say, "Lay on, Macduff," etc.

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## NOTES AND QUERIES.

*Saponis Kali*, used, I believe, in skin diseases. What is it?—A. J. S.

As the name stands, it might be literally translated as "potassa of or from soap," but it no doubt means potash soap or soft soap. It should be written *Sapo Kalii;* but in prescription, both words being in the genitive case, it would become *Saponis Kalii.*

When does the next term in the Chicago College of Pharmacy begin? Will the lectures be given in the afternoon or in the evening? —R. O. S.

The next term will probably begin on or about the first day of next October, and the lectures will probably be given in the afternoon, as at present. The next catalogue will be issued early in the spring.

A subscriber wishes to know how to adjust the quantity of a mixture of acid substances to the bicarbonate of sodium in a baking powder. Of course a calculation based upon the atomic and molecular weights of the substances employed would lead to a mathematically correct formula, but such calculations are beyond the ability of all, and besides are sometimes misleading, because the ingredients are not always strictly pure and dry, or they may be partly effloresced, and hence of indefinite strength. The easiest way to effect an exact adjustment will be to dissolve say 1,000 grains of bicarbonate of sodium in warm (not hot) water and filter, then make a solution of say 3,000 grains of the acid mixture in a definite quantity of warm water, filter and add slowly to the soda solution, with constant stirring until effervescence ceases and until red litmus is no longer colored blue by the liquid. Then note the amount of the acid solution consumed, which will indicate the quantity of the acid mixture to be mixed with 1,000 grains of the sodium salt. Practically, a slight excess of the acid mixture ought to be added to secure white bread.

"What article or compound do dairy men use to color butter?"—OLIVER, Peoria.

Annotto or annatto dissolved in alkaline solution is the agent usually employed for coloring both butter and cheese. Recently we examined chemically a specimen of substance in the form of a brownish yellow powder, which is represented to be capable of increasing the yield of butter about one-tenth and of coloring it to a handsome yellow. We found it to consist of bicarbonate of sodium colored with annatto, and nothing more.

## IOWA PHARMACEUTICAL ASSOCIATION.

In pursuance of a call, which we published in our last issue, the druggists of Iowa, in considerable numbers, assembled at Des Moines, on February 10th, with the view of effecting a State organization.

Mr. L. H. Bush, of Des Moines, was chosen temporary chairman, and Mr. Geo. C. Henry, of Burlington, temporary secretary.

A committee was appointed on credentials, which reported 250 applications for membership, of whom over 100 were reported as present.

Mr. Geo. H. Schafer, of Fort Madison, being requested by the chairman, stated the objects of the convention to be the formation of a State organization, with the view of elevating the standard and dignity of the profession, and with the further view of securing united action in legislation looking towards the protection and regulation of the trade.

The following officers were elected:

*President*—Geo. H. Schafer, Fort Madison.

*Vice-Presidents*—Geo. B. Hogin, Newton; W. S. McBride, Marshalltown; F. W. Parish, Clarinda; Francis Lee, Clinton; C. P. Squires, Burlington.

*Secretary*—H. W. Dodd, Fort Madison.

*Assistant-Secretary*—A. H. Miles, Des Moines.

*Treasurer*—C. H. Ward, Des Moines.

*Executive Committee*—W. B. Consins, Albia; W. E. Schrader, Iowa City; Norman Lichty, Des Moines.

The following gentlemen were selected as delegates to the American Pharmaceutical Association: T. W. Ruete, Dubuque; C. R. Wallace, Independence; A. R. Townsend, Boone; J. W. Sattherthwait, Mt. Pleasant; Max Conrad, Ottumwa.

The following communication from the Woman's Christian Temperance Union and the reply thereto are worthy of re-publication:

DES MOINES, February 10.

*The W. C. T. U. of Iowa to the Officers and Members of the Druggists' Convention, held in Des Moines, February* 10 *and* 11, 1880, *greeting:*

Permit us, as representing many temperance women of our State, to memorialize the druggists of Iowa, in convention assembled, in regard to the relation of their business to the evils of intemperance. The members of our Woman's Christian Temperance Unions, in the prosecution of their temperance work, have learned, to their sorrow, and beyond a doubt, that many of the druggists of Iowa are carrying on not only a legitimate trade in drugs, chemicals, paints and alcoholic liquors, but the illegitimate sale of alcoholic beverages, persistently violating the law of the State in regard to the sale of such liquors, and placing hindrances in the way of effective temperance work almost insurmountable. With certain knowledge of women whose loved ones have been and are being ruined by this illegitimate trade of our druggists, and sympathizing with those sorrowing women, whose fathers, husbands and sons indulge their appetites for drink in these elegant, respectable drug stores—men of intelligent culture and social position, who would be ashamed to be seen visiting our saloons—we pray you, while in convention assembled, by your open and avowed statement, to brand these law-breaking dealers with the disapprobation of all honorable druggists, and lift from the legitimate trade of the druggist the opprobrium which the day rests upon it, because the avarice of some men exceeds their honesty.

We rely upon the honorable temperance men engaged in this business to take from the mouths of our opponents, the advocates of license and moderate drinking, the oft-repeated statement, "Suppose you do succeed in closing the saloons of Iowa, we can get all the liquor we want in any drug store in the State." We pray you to believe that to the legitimate trade of the druggist we have no objection, while we ask for the united, emphatic and effective protest of this convention against this illegitimate trade in alcoholic liquors—the so common violation of our liquor law that has brought even the very name of druggist into general disrepute, prejudicial and unjust to all individual druggists engaged in a legitimate trade.

Yours respectfully,
MRS. M. J. ALDRICH.
MRS. J. ELLEN FOSTER.
MRS. L. H. WASHINGTON.

The convention sent the following response to the above:

*To Mrs. M. J. Aldrich, Mrs. J. Ellen Foster and Mrs. L. H. Washington, Committee of the Woman's Christian Temperance Union.*

LADIES: Your communication of the 10th inst., addressed to the Pharmaceutical Association of Iowa, was duly received and read in session, and after deliberate consideration the undersigned were appointed to convey a reply, in which we desire to thank you for your kind consideration, assuring you that we heartily coincide with the sentiments expressed in your communication, and trusting that our efforts to raise the standard of our profession in the State may relieve us from the stigma attached thereto by reason of the prostitution of our business by unprincipled men, we are,

Very respectfully,
GEO. B. HARGIN,
J. W. SATTERTHWAITE, } *Committee.*
F. W. PARISH,

DES MOINES, IOWA, February 11th, 1880.

The above was unanimously indorsed by the Association.

H. W. DODD, *Secretary.* GEO. H. SCHAFER, *President.*

The following resolutions were unanimously adopted:

*Resolved,* That this association has learned with pleasure of the efforts being made by the "Western Wholesale Drug Association" to secure the repeal, or at least very material modification, of the Stamp act affecting medicines, perfumery, etc., and desires heartily to indorse said effort. We believe the law, as it at present stands, is unjust and oppressive.

*Resolved*, That our Secretary be instructed to forward a copy of these resolutions to the Commissioner of Internal Revenue, and each member of the Senate and House representing this State.

The President then appointed the following permanent committees for the ensuing year:

*Committee on Trade Interests*—R. W. Crawford, Fort Dodge; A. D. Crain, Des Moines; C. H. Holmes, Magnolia.

*Committee on Pharmacy and Queries*—Emil L. Boerner, Iowa City; Herman Tiarks, Monticello; Martin O. Oleson, Fort Dodge.

*Committee on Legislation*—L. H. Bush, Des Moines; D. Q. Storie, Chariton; D. B. Snyder, Lyons.

Invitations were received from various cities of the State for holding the next annual meeting. Des Moines was selected by a large majority.

A vote of thanks was then extended to the druggists of Des Moines and those who assisted in forming the Association.

The meeting then adjourned to meet in this city, on Tuesday, February 8th, 1881.

During the sessions an act for the regulation of Pharmacy was discussed, of which the following is an abstract copied from the *Druggist:*

Sec. 1. "Provides that it shall be unlawful for any person not a *registered* pharmacist to retail, compound or dispense medicines or poison for medical use.

Sec. 2. "No apothecary shall allow any person except a registered pharmacist to retail or compound, etc., except as an aid to and under the immediate supervision of a registered pharmacist.

Sec. 3. "The Governor shall appoint three persons from among the 'most competent pharmacists of the State' to serve as 'Commissioners of Pharmacy,' one of whom shall hold office for one year, one for two years, and the other for three years, and each year thereafter a commissioner shall be appointed for three years, to serve without expense to the State.

Sec. 4. "The commissioners shall register the names, with residence, of all persons to whom they issue certificates. They are instructed to register, *without examination*, as registered pharmacists, all those engaged in the business in Iowa at the time of the passage of the act, and all assistant pharmacists twenty-one years of age, with a practical experience of four years.

SEC. 5. "Every person thereafter desirous of entering the business shall first submit to an examination by the commissioners, either oral or by a schedule of questions to be answered and subscribed to under oath. If deemed competent by a majority of the examiners he shall be entered as a registered pharmacist. Graduates of incorporated colleges of pharmacy whose diplomas represent a practical experience of four years are entitled to registration without examination.

SEC. 6. "The commissioners shall receive for simple registrations the sum of two dollars each, and for registration with examinations five dollars. In case an applicant's examination should prove defective he may, after one year, present himself for re-examination, for which no charge shall be made.

SEC. 7. "Every registered pharmacist shall be held responsible for the quality of his wares, with the exception of those sold in original packages and of patent medicines. Intentional adulterations are punishable with a fine not exceeding one hundred dollars and forfeiture of registration privileges.

SEC. 8. "Permits every registered apothecary to keep and sell all medicines and poisons authorized by the National, American or United States Dispensatory and Pharmacopœia as of recognized utility, but this trust shall not be construed so as to shield any pharmacist abusing it from 'the utmost rigor of the law relating to the sale of intoxicating liquors,' his name being also stricken from the register.

"The sale of certain scheduled poisons is regulated by the usual precautionary restrictions.

SEC. 10. "Imposes a license tax of one hundred dollars per annum upon any itinerant vendor of medicinal articles who shall publicly profess for them curative powers.

SEC. 11. "Any person procuring registration for himself through fraudulent representations shall be liable to a penalty of not less than twenty-five nor more than one hundred dollars; any person not a registered pharmacist who shall nevertheless use or exhibit such title shall be liable to a penalty of not less than fifty dollars.

SEC. 12. "This act shall not apply to physicians who put up their own prescriptions, nor to the sale of proprietary medicines."

Not having seen a draft of the original bill proposed, we are somewhat uncertain as to its precise provisions; but if the pharmacists of Iowa are to be permitted to sell all medicines and poisons now recognized by the three dispensatories (National, U. S. and American) "as of recognized utility," and *none others*, except at their risk and peril, our brethren there will soon find that they have nailed themselves up in a box, for it is not likely that progress will cease with the passage of that bill, or that the stream of "new remedies" will suddenly become dry.

To debar physicians regularly graduated in their profession from the privilege of opening drug stores, except by passing an examination, is also a step hardly warranted by the public welfare, for although a doctor is at first usually an unsuccessful pharmacist, in a financial point of view, it is fair to presume that he understands as much about poisons and other dangerous drugs as the graduate in pharmacy. His efforts are far more likely to prove suicidal (financially) than homicidal to his patrons.

The clause holding the druggist responsible for the purity of his drugs is a good one, but should have been broad enough to punish those who sell impure goods, as factitious cream of tartar, etc., knowing the articles to be spurious.

The tenth section, against itinerant vendors, etc., ought to include newspapers, bill-posters, almanac advertisers, etc., for by these means, rather than by street-corner harangues, are the people cajoled into the patronage of the most abominable frauds.

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ENTERPRISING MEN.—On looking over the host of specimens of new remedies in our cabinet we find that most of them came from James G. Steele & Co., of San Francisco, Cal. Inquiry among those in the wholesale trade develops the fact that this firm actually supplies nearly the entire stock of crude drugs which we receive from the Pacific Slope.

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DISPUTE IN A DRUG STORE.—Doctor, excitedly stamping his cane on the floor—"Sir, if you expect to receive my patronage, you must, when I order pepsin, dispense Boudault's." Pharmacist—"Sir, if your royal highness please, it is your duty to prescribe the medicines best adapted to the case and my duty to fill your prescriptions with the best drugs obtainable. Having tested experimentally most of the brands of pepsin in the market, I am satisfied Biroth's article is, to say the least, as good, if not better, than any imported brand." Doctor, calmly—"I guess you are right. On reflection, I believe I have heard others say the same thing; but these new names are dreadful hard to remember."

CAUTION.—Those physicians who have been in the habit of prescribing fluid extracts in about the same or just a little smaller doses than tinctures will come to grief if they prescribe Thayer's fluid extracts, especially of powerful toxic drugs, in that reckless manner. The verdict of unbiased physicians and pharmacists is that these goods are honestly made of full strength, as are their sugar-coated pills and other preparations.

PILL VETERANS.—In five international expositions, when placed in fair competition with all similiar goods produced in the world, the pills of Wm. R. Warner & Co. have come off victorious. Except in this country, this firm has no rivals in the world worth mentioning. Having known these goods for twenty years, we feel justified in saying they are reliable, stable and handsome, a trio of qualities not always found in sugar-coated pills.

AT the annual meeting of the Chicago Drug Clerks' Association, held at the College rooms, on Wednesday, February 11th, the following gentlemen were elected to fill the offices of the Association for the ensuing year: *President*—A. G. Fleischer, Ph. G. *Vice-President*—John Rosch. *Secretary*—Emil Thiele. *Treasurer*—Charles Heylmann. *Registrar*—C. S. N. Hallberg, Ph. G. *Members of the Executive Board*—Rich. C. Frerksen, Alb. C. Wehrli, Ph. G., John Brown, John Coleman, Otto G. Stolz. At a subsequent meeting of the Executive Board, Mr. Alb. C. Wehrli, Ph. G., was elected chairman

ON THE SOURCE OF HIPPURIC ACID IN THE URINE OF HERBIVEROUS ANIMALS (O. Loew).—Quinic acid was found in ordinary meadow hay. This acid would be changed into hippuric during the process of digestion. Benzoic acid was also recognized in cranberries. —*Journ. American Chemical Society.*

## BOOK NOTICES.

*Druggists' Ready Reference Book.* Published by Morrisson, Plummer & Co., Wholesale Druggists, Chicago.

Although the main object of this work of 334 pages, royal 8vo., is to present the patrons and friends of the firm with a fresh price list of drugs, chemicals and druggists' sundries, which in itself is comprehensive and systematic, still about one-fourth of the volume is devoted to useful tables, recipes, tests, antidotes to poisons, postal regulations, etc., giving the volume a value and interest not possessed by any other similar publication that we have seen.

*Report on the Revision of the United States Pharmacopœia*, preliminary to the Convention of 1880; compiled from numerous MSS. presented at the meeting of the American Pharmaceutical Association, at Indianapolis, and from other sources, by Charles Rice, aided by Dr. E. R. Squibb, Dr. Fred. Hoffman and others.

This report, designed for gratuitous distribution among leading pharmacists and medical men, contains numerous valuable suggestions as to the material and processes to be incorporated in the next *Pharmacopœia*—if we are to have another of these every-ten-years productions, which seems to be a little doubtful. These reports and papers seem to be fully abreast of the times in the matter of the recognition of new remedies and processes. We think the authors err, however, in presenting too many "ready-made prescriptions," leaving too little in the hands of the physician, except that his memory, as of old, is to be taxed to its uttermost capacity, and in fact far beyond, to remember the drug strength of the multitude of galenical preparations suggested. If we only had a dozen drugs it might be excusable to present each one in a dozen officinal forms, as in extract, fluid extract, tincture, syrup, infusion, elixir, ointment, plaster, etc.; but since our materia medica list has grown to enormous proportions, and is still rapidly enlarging, simplicity is the direction in which reform is most needed. Having discussed this question in THE PHARMACIST for November, 1879, we omit recapitulation here.

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THE oldest houses, after testing all other plans, invariably return to first-class journals as the cheapest and best form of advertising.

# REVIEW OF CHICAGO DRUG MARKET.

**Notwithstanding the bad condition of the roads throughout the country, the jobbing trade in drugs in this city has been decidedly active during the past month. Quinine is still advancing, P. and W. being held at $3.40 in ounce bottles in New York. Morphine, borax and oil of peppermint are higher. The mercurials, nominally about stationary, are on the point of advancing, as we learn from first hands. As quinia, cinchonia, salicin, etc., are put up in one-ounce bottles, and also in five-ounce tin cans, our quotations refer to the articles in such packages, the higher figures referring to the one-ounce packages.**

| | | |
|---|---|---|
| Acid, Nitric | lb. | 80 @ 85 |
| " Tartaric | " | 54 @ 55 |
| Aloes | " | 18 @ 50 |
| Amm., Carbonate | " | 22 @ 25 |
| " Muriate | " | 15 @ 16 |
| Bleaching Powder | " | 4 @ 5 |
| Blue Vitriol | " | 11 @ 12 |
| Borax | " | 12½ @ 13 |
| Camphor | " | 35 |
| Cantharides | " | 1.40 @ 1.60 |
| Cassia | " | 25 @ 30 |
| Castile Soap | " | 9 @ 18 |
| Chamomile Flowers | " | 30 @ 40 |
| Cinchonidia, oz. bots | oz. | 1.10 @ 1.15 |
| Cloves | lb. | 48 @ 50 |
| Cream Tartar (pure) | " | 38 @ 40 |
| Cubebs | " | 25 @ 28 |
| Cuttle Fish Bone | " | 25 @ 30 |
| Ergot | " | 75 @ 85 |
| Ginger, Afr | " | 10 @ 15 |
| " Jam | " | 25 @ 30 |
| Glycerin | " | 18½ @ 85 |
| Insect Po | " | 75 @ 80 |
| Iodine, Resub | " | 6.75 @ 7.00 |
| Ipecacuanha Po | " | 1.75 |
| MERCURIALS— | | |
| Blue Pill | " | 50 |
| Calomel | " | 70 @ 75 |
| Corrosive Sub | " | 60 @ 65 |
| Mercurial Oint | " | 45 @ 55 |
| Red Precipitate | " | 85 |
| Morphia Sul. P. & W. | ⅛ oz. | 4.25 |
| Nutmegs | lb. | 1.10 |
| Oil, Anise | " | 3.50 @ 3.75 |
| Arnica Flowers | lb. | 20 @ 22 |
| Assafœtida | " | 25 @ 28 |
| Balsam Copaiba | " | 75 @ 80 |
| " Tolu | " | 90 @ 1.00 |
| Bees-wax | " | 30 @ 33 |
| Oil Bergamot | " | 3.25 @ 3.50 |
| " Cassia | " | 1.60 @ 1.65 |
| " Castor | gll. | 92 @ 1.00 |
| " Lemon | lb. | 3.75 @ 4.00 |
| " Olive | gll. | 80 @ 3.50 |
| " Pennyroyal | lb. | 1.25 @ 1.30 |
| " Peppermint | " | 3.50 @ 3.75 |
| " Sperm (pure) | gll. | 1.45 @ 1.50 |
| " Winfergreen | lb. | 3.25 @ 3.50 |
| " Roses | oz. | 5.00 @ 8.00 |
| Opium | lb. | 5.50 @ 5.60 |
| Pepper, Cayenne | " | 28 @ 30 |
| Potass., Bromide | " | 38 @ 40 |
| " Chlorate | " | 22 @ 25 |
| " Iodide | " | 4.75 @ 5.00 |
| Quicksilver | " | 55 @ 60 |
| Quinine, P. & W., 1 oz. btls. | | 3.35 @ 3.40 |
| Salicin, 1 oz. vials | oz. | 45 @ 50 |
| Santonin, 1 oz. vials | " | 85 @ 90 |
| Seed, Canary | lb. | 5 @ 6 |
| " Hemp | " | 5 @ 6 |
| Senna | " | 18 @ 25 |
| Seneka Root | " | 85 @ 1.00 |
| Shellac | " | 50 @ 55 |
| Soda, Bicarb | " | 4½ @ 6 |
| " Sal | " | 1¾ @ 3 |
| Squills | " | 14 @ 16 |
| Sugar, Lead, white | " | 18 @ 20 |
| Tonqua Beans, Angostura | " | 1.85 |

THE PHARMACIST.

VOL. XIII. CHICAGO, APRIL, 1880. No. 4.

## A POISONING CASE WITH LESSONS.

An interesting poisoning case came before the Coshocton County Court, at the February term, in which a woman was charged with administering arsenic to her husband, who died the 13th of August, 1870, with all the symptoms of arsenical poisoning. The body was exhumed on the 26th of August, the abdominal viscera removed and submitted to Prof. C. Howard, of Columbus, for analysis, who reported traces of arsenic in the stomach, intestines and kidney and four-fifths of a grain in the liver.

The Professor was of course an important witness in the trial and his examination elicited some facts which are not without interest to chemical students. The tests he used were Reinsch's and Marsh's. He described the manner of distinguishing the metallic spot of arsenic on porcelain from that of antimony, relying on the hypochlorite of sodium solution and the nitrate of silver tests, together with the production of the octahedral crystals which have always been considered so highly characteristic of the arsenical sublimate. The defense created a doubt in the minds of the jury as to the reliability of Prof. Howard's analysis by showing on cross-examination that a work on jurisprudence considered the hypochlorite of sodium test of the arsenical spot as wholly unreliable, as *it would also dissolve the antimonial spot*, though slowly. The production of octahedral crystals was proven to be unreliable as a test for arsenic by a recent statement from Prof. Wormley that antimony sometimes will produce crsytals *which cannot be distinguished in appearance from those of arsenic.* We are here taught the important lesson that some of the so-called reliable distinguishing tests for arsenic are not reliable, and the careful toxicologist should make use of more confirmatory tests. The attending physician testified that he had prescribed subnitrate of bismuth to the patient, and we have not the least doubt that the arsenic found in the viscera came from this medicine. What an important lesson to the pharmacist? Here was a woman on trial for murder, arsenic was found in her dead husband's remains, and circumstantial evidence pointed to her guilt, and yet we believe the cause of the whole proceedings was this treacherous subnitrate of bismuth. Every druggist should carefully test his preparations of bismuth and ascertain whether or not they are contaminated with arsenic. We are happy to state that the woman was acquitted. PHIL. HOGLAN.

NEWCOMERSTOWN, O., March 19, 1880.

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## PILL COATING.

*Albumen and Sugar.*—Pills sufficiently firm and dry should be rolled between the finger and thumb with sufficient white of egg to give them a thin coating. They should then be placed with finely powdered white sugar in a suitable vessel and rotated. The coating looks well and has a pleasant taste.

*French Chalk and Sugar.*—The pills are moistened with syrup or mucilage, or a mixture of the two, by shaking in a covered pot. They are then transferred to a box containing powdered French chalk or a mixture of French chalk and sugar, and are well shaken, and again transferred to a warm pill tray and kept rapidly rotating until dry and smooth. The operation takes but little time.

*Gelatine.*—Dr. Symes recommends the following formula: French sheet gelatine, four parts; water, sixteen parts; glycerin, one part; melt with the aid of heat. A board is required into which pins have been pressed so that the points project some distance, and it is a saving of time to have a corresponding board with a hemispherical depression opposite each pin. The points of the pins are slightly greased, a pill placed on each, and scum is removed from the solution, kept warm, the pills are immersed, and a rotary motion with occasional inversion is kept up until the gelatine sets. Another good method is that of Mr. R. H. Dimock, which was noticed in *The Druggists Circular* of October, 1879.

*Sugar.*—By practice pills may be beautifully coated with sugar by the following process: Pills well dried on the surface are placed in a thin copper bowl with a flat bottom, or an enameled iron dish, the surface of which has been moistened with syrup or syrup and gum. They are then rotated and gently heated, very finely powered sugar being dusted on, and the motion kept up till a perfectly dry, hard and whitish coating is obtained, the operation being repeated if necessary. The first attempt is generally a failure, but practice is the only secret.—DR. SYMES.

*Tolu and French Chalk.*—This was introduced by Dr. Symes in 1860. The resin left after making syrup of tolu is dissolved in ether sp. gr. 0.717 to 0.720. The pills are rolled in this, and while still moist are transferred to a box containing finely powdered French chalk, then turned into a warm pill tray and kept rotating for a short time. Finally polish with slight pressure under the pill finisher. The result is a steel-gray smooth coating.

*Tragacanth and Sugar.*—Recommended by M. Calland for pills containing essential oils. Mix one part of powdered tragacanth with two of water; press the mixture through muslin, add twenty parts powdered sugar of milk, and dry in a thin layer on a porcelain slab. Finally reduce it to a very fine powder. Dr. Symes says that this is not easily done, but the success of the coating depends on the fineness of the powder. The pills are moistened with water and rolled in the powder, a rotary motion being kept up till they are dry.

*Varnish for Pills:*

| | |
|---|---|
| Sandarach | ℥ j. |
| Æther | ℥ iij. |

J. Whitfield, F. C. S., recommends the following varnish for pill coating:

| | |
|---|---|
| Common amber resin | 1 to 2 drs. |
| Spirits of turpentine | 1 drachm. |
| Absolute alcohol to | 1 oz. |

Twenty minims of oil of geranium or other essential oil may be added. The pills should be as hard as possible.—*Chemists and Druggists Diary.*

## ST. JACOBS OIL AND OTHER NOSTRUMS.*

### FAMILY MEDICINES.

The firm of A. Vogeler & Co., in Baltimore, keeps the sole depot for America of Dr. Aug. Koenig's family medicines: Hamburger drops, breast-tea and herb-plaster, and imports besides, St. Jacobs oil, prepared of Schwarzwalder pine-tree leaves.

These "old German remedies" are, as we are informed by a subscriber, who also sent us those goods, sold and used much in all parts of the United States.

The breast-tea, "the best remedy against all attacks upon the lungs," etc., is a mixture of marshmallow, liqpuorice roots, poppy, malva flowers, marshmallow leaves and the saffron-colored flowers of stellaria; to this well prepared species is added coarsely powdered rock candy, flavored with anise and fennel oils. A package of fifty grams costs 25 cents.

The drops—"up to date there has not been invented any medicine which relieves so instantly in the most severe sicknesses"—resemble the well known Swedish life elixir, but contain more agaric and are thickened with juniper juice. A bottle of thirty grams costs 50 cents.

The plaster was not at hand.

The St. Jacobs oil, "known during one hundred years as an infallible remedy against rheumatism," etc., is a good oil of turpentine flavored with a little oil of rosemary and lavender and colored slightly red with alkanet or sandal wood. A bottle of about 100 grams costs 50 cents.

## EXCIPIENTS.

*Bread-crumb* is a useful excipient when balsam of Peru is ordered, or when the ingredients are too moist to make a good mass. Two grains of this will make a mass with one grain carbolic acid or one minim creasote. If the bread is crumbly a very little glycerin and tragacanth excipient may be added.

*Calcium Phosphate* possesses in a very remarkable degree the property of giving a greasy substance, such as lard or mercurial ointment, a good pilular consistence, when added in comparatively small quantity.

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* Translated from Dr. Hager's Pharmaceut. Central Halle of Jan. 29, 1880, page 42.

*Confection of Roses* and *Confection of Hips* increase the bulk of pills more than is liked nowadays.

*Decoctum Aloes Co.* is sometimes useful where a considerable quantity of oil has to be combined with a rather soft mass.

*Glycerin* alone is not a good excipient, as pills containing it are liable to absorb moisture, and do not take silver well.

*Glycerin*, 1 part, with treacle, 3 parts, is an excellent excipient for pil. aloes et myrrhæ.

*Mucilage.*—Pills made with mucilage become very hard in course of time.

*Spirit* should not be used when there is much resin in the pill, and pills made with it should be rolled off very quickly or they will crumble.

*Tragacanth* gives solidity and elasticity to a mass a little too soft, but if too much be added the pills become so elastic that it is almost impossible to round them with the finisher.

*Tragacanth and Glycerin* is the best excipient for salts and metallic oxides, such as potassium bromide and bismuth subnitrate. The mass should be well kneaded, or more of the excipient will be used than is really necessary.

Tragacanth excipient for pills :

| | |
|---|---|
| Pulv. tragac. | ℥ j. |
| Glycerin | ℥ iv. |

Mix.

| | |
|---|---|
| Or Tragacanth in powder | ½ oz. |
| Glycerin and water, of each | 2½ oz. |
| Oil of pimento | 5 drops. |

G. Welborn.

*Wax in Small Shavings*, with a little powdered soap where not incompatible, is the best excipient for essential oils, carbolic acid, creasote, etc.

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Mustang Liniment of the Americans, for sprains, rheumatism, chilblains, etc. A mixture of petroleum, ammonia, and spirit.—*Vorwerk.*

## SULPHO-METHYLATE OF SODA—A NEW PURGATIVE.

M. Rabuteau has investigated a new purgative, analogous to sulpho-vinate of soda. It is obtained by treating methyl alcohol with sulphuric acid, when methyl sulphuric acid and water are obtained. This product is neutralized with carbonate of barium, when the excess of sulphuric acid is thrown down in the insoluble form of barium sulphate, and there remains in solution sulpho-methylate of baryta, a substance which is very soluble, and which can be crystallized. It is then treated afresh with sulphuric acid, which liberates pure sulpho-methylic acid, which yields sulpho-methylate of soda when neutralized with soda. The salt is white and very soluble, crystallizing with difficulty, of a feeble taste comparable to that possessed by sulpho-vinate of soda, with a sweet after-taste. Unfortunately it decomposes very rapidly into sulphate of soda and methylic products of a slightly garlic-like odor. Ten grams of the salt in 25 c. c. of water injected into the veins of a dog produced constipation. Acting upon the observation that the substance, when introduced in the blood, gave rise to constipation, M. Rabateau bélieved that it should act as a dialytic purgative when given by the mouth. He therefore administered it to two patients; in one case a woman took 15 grams in two doses, when it produced three stools, of which two were copious; in the second, a man took eighteen grams, resulting in two stools without colic. The taste of the purgative is hardly perceptible, but it is difficult to preserve it.—*La Praticien—Journal and Examiner.*

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**Neutral Chromate of Lead in Pastry.**—M. Personne, at a late meeting of the French Academy of Medicine, called the attention of the members to a new adulteration made use of by confectioners in the manufacture of cakes. This consists in the employment of the neutral chromate of lead, instead of eggs, to produce the golden yellow color of certain pastries and cakes. Suspicion was first excited by the exceedingly bright yellow shade of a certain confectioner's goods, a sample of which, having been analyzed, was found to contain 73 milligrams of oxide of lead in 100 grams weight of the article.—*Detroit Lancet.*

## NOTES AND ABSTRACTS FROM VARIOUS SOURCES.

THE FIRST PHARMACY OF IODINE.—When Dumas was about eighteen years of age "he had the good fortune to make himself useful to one of the principal physicians of the town, a circumstance which contributed not a little to advance him in the circles in which he had hitherto lived. One morning Dr. Coindet came in hastily to Le Royer's. 'You occupy yourself with chemistry,' he said to Dumas. 'To some extent,' was the answer. 'Then you could tell me whether iodine is present in sponges, and more especially in carbonized sponges?' 'I will examine them for you.' Having, after some days, received an affirmative answer, Dr. Coindet no longer hesitated to consider iodine a specific against goitre. Dumas was then asked to give his attention to the subject, and to point out the preparation in which iodine might be most conveniently administered. He suggested tincture of iodine, potassic iodide, and iodized potassic iodide. Soon afterward these new remedies were mentioned in a German journal published at Zurich, and it is in this connection that the name of Dumas is first met with in scientific literature. The same journal gave the formulæ proposed for these remedies, as also their mode of preparation. It need scarcely be mentioned that at that period, so soon after the discovery of iodine by Courtois, none of the iodides were known to the trade, iodine itself being the only commercial article. The discovery of Dr. Coindet produced a great sensation all over the world, and for many years the manufacture of iodine preparations for medical purposes proved a source of wealth and reputation to the pharmacy of Le Royer."

PETROLEUM IN GERMANY.—It is reported that oil has been "struck" in Germany, in the neighborhood of the city of Hanover. The oil is found in the suburbs of Linden and Linmer, as far as the Hildesheim Hills to the south and the villages of Oilper Klein Scheppenstett to the east. The whole area comprises about forty square miles, the centers being Oberg and Oilsburgh, and the districts due north and south of these two principal places. Herr Strippelman, a well-known mining engineer, gives it as his deliberate opinion that things in Hanover reached a point exactly similar to what was the situation in America immediately anterior to the discovery of the Pennsylvanian wells. A like view is taken in a report by Herr von Ducken, a Hanover mining Councillor and Government engineer, who has just inspected the Oedessen Works. As might have been expected, steps are being taken for forming a Petroleum Boring Company, to work the newly-discovered riches of Hanover. The Pennsylvanian rope-boring apparatus now employed is capable of piercing from thirty to forty feet per day, whereas with the old machinery hitherto in use no more than two or three feet could be perforated. The present yield of the Hanoverian well is at the rate of 10,000 cwt. per annum. Consumers, therefore, may be congratulated upon this valuable addition to the available supplies of so cheap and useful an illuminator as petroleum.—*The Chemist and Druggist.*

BORO-CITRATE OF MAGNESIA A NEW SOLVENT FOR URIC ACID CONCRETIONS.—H. P. Madsen, in Copenhagen, has investigated the solubility of urinary calculi in solutions of benzoate of lithia and of boro-citrate of magnesia, and found that the latter salt is by far the better solvent, dissolving about seventy per cent. against thirty-three by the benzoate of lithia; distilled water dissolved about ten per cent.

Boro-citrate of magnesia was prepared as follows:

Two parts of citric acid are dissolved in three parts of boiling hot water, then one part of carbonate of magnesia and two parts of borax are added. The solution is left to spontaneous evaporation, which leaves the salt in transparent lamina.

The calculi experimented with consisted chiefly of uric acid. Madsen intends to study the solubility of calculi of different composition.—*Druggists Circular and Chemical Gazette.*

NARCOTISM FROM NUTMEGS.—The fact that nutmegs have strong narcotic properties has long been known, but they are in such common use as a favorite condiment used in small quantities that their dangerous nature when taken in large quantity is apt to be overlooked and forgotten, even by those who are aware of their tendency. A physician reports, in one of our medical exchanges, a case where a lady patient during his absence was induced by her old woman nurse to take nutmeg tea. One and a half nutmegs were used in making the tea, and the patient drank the whole of the decoction during the day. About 10 o'clock at night she began to get drowsy, and by 4 o'clock the next morning she was in a profound stupor. At 10 o'clock the next morning the narcotic effects of the nutmeg began to wear off, and by 4 P. M. she had pretty well recovered. The symptoms were about the same as those produced by opium, and the remedies given for them were the same.

Nutmeg in the quantity of two or three drachms has been known to produce both stupor and delirium; and dangerous and fatal consequences are said to have followed its free use in India. Mace, which is the outside covering of the nutmeg, possesses essentially the same properties.—*Scientific American.*

Bursa Pastoris.—Another medicinal agent of vegetable origin, and the last to which I intend to call your attention just now, is the Bursa Pastoris, or Shepherd's Purse, one of the cruciferous plants native to Europe, but extensively naturalized in this country. I used it at first to relieve the incontinence of urine in aged people, especially women, and was surprised and delighted at the promptness of its action in the removal of this troublesome complaint. Latterly I have extended its use so as to cover many of the disorders of the urinary apparatus, notably cystic irritability and some forms of chronic diseases of the kidneys. Though it is mentioned by Stille and Maisch as a stimulant to promote menstruation, it was by accident that I learned that it possessed this power. A lady had not menstruated normally for two or three years, and therefore, when I was treating her for urinary disorder, she did not think it worth while to mention the fact. At the next catamenial period, to her surprise, she menstruated profusely, and asked me if the medicine she had been taking had anything to do with it. I did not know, but since then I have frequently had opportunities to demonstrate its emmenagogue properties. Strange to say, it is also hæmastatic, and is used in menorrhagia and hæmaturia. The dose of the tincture is thirty drops four to six times a day.—*Dr. Tucker in Chicago Medical Gazette.*

Removal of Iron Rust from Clothing.—Rust spots are easily removed from white fabrics by soaking in a weak solution of tin salt (stannous chloride) and rinsing immediately with abundance of water. The action is more rapid and certain than that of oxalic acid, unless the latter is contained in a tin spoon.—*Detroit Lancet.*

Substitute for Linseed Oil and Turpentine.—One hundred parts of resin melted and well mixed with 2 parts of soda in 50 parts of water, then 250 parts of water and 24 parts of ammonia are added.

## CHICAGO COLLEGE OF PHARMACY.

### SYNOPSIS OF PROCEEDINGS.

BOARD OF TRUSTEES' MEETING, March 9, 1880.

Special Committee on Revision of the Constitution, By-Laws and Code of Ethics presented a report, which was accepted and laid over until after the annual meeting.

Finance Committee presented a report on the official bonds of Thos. Whitfield, Chairman of the Lecture Committee, and J. H. Wilson, Treasurer of the Publishing Committee, which was accepted.

The Committee on Examination and the Faculty presented a report recommending for graduation John F. Coleman, Geo. E. Dickinson, William F. Dunham, Richard C. Frerksen, Sidney S. Hotchkiss, August Jacobson, Charles J. Nohe, Emil Otto, Henry C. Pilgrim, William W. Pearce, Fred. M. Schmidt, Fred. H. Secord, Otto G. Stolz, Chas. S. Sturges, Emil Thiele, Mrs. Celia Tirrell, Fred. Voegeli, William W. Wyckoff.

Messrs. E. H. Sargent, H. D. Garrison and Geo. M. Hambright were elected delegates to the Sixth Decennial Pharmacopœia Convention, and Messrs. F. M. Goodman, Thos. Whitfield and George Buck alternate.

Messrs. Geo. W. Green and Geo. M. Hambright were elected members of the College, and Messrs. Schmidt, Secord, Dunham, Sturges, Otto, Voegeli, Hotchkiss, Pilgrim, Coleman, Pearce, Stoltz, Frerksen and Jacobson, members of the graduating class, announced their wish to become members of the College.

Mr. Whitfield, Chairman of the Lecture Committee, read a letter from Prof. Bastin in regard to some changes in the course in botany which he wished to make, and the matter was on motion referred to the next Lecture Committee.

S. L. COFFIN, *Secretary.*

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## NOTICE.

The annual meeting of the members of THE CHICAGO COLLEGE OF PHARMACY will occur at 2 P. M. on the first Tuesday (6th) of April. As officers for the ensuing year are to be elected and several important reports presented, a full attendance is desirable.

## COMMENCEMENT EXERCISES OF THE CHICAGO COLLEGE OF PHARMACY.

The thirteenth annual commencement exercises of the Chicago College of Pharmacy occurred in Fairbanks' Hall, Thursday evening, March 11th. After prayer by the Rev. Clinton Locke, Vice-President, George Buck, in the absence of the President, opened the exercises by a brief introductory address, in which he sketched the past, present and prospective condition of the College, showing its rapid advancement in patronage and influence, and predicting for it in the future a useful and honorable career.

Next on the programme was the

### VALEDICTORY ADDRESS TO THE GRADUATING CLASS,

BY PROF. GEO. HAMBRIGHT,

Which was as follows:

LADIES AND GENTLEMEN: We have assembled this evening to take part in the exercises of the thirteenth annual commencement of the Chicago College of Pharmacy, and it becomes our duty as well as pleasure to state that the present class is the largest that has ever been graduated into the ranks of Pharmacy from this College.

In 1861 the College conferred the degree upon two gentlemen; but to-night we present you with eighteen graduates, who possess qualifications sufficient to stamp this as the banner class of the College: not only on account of the thorough examination through which it has just passed and the successful manner in which it has been accomplished, but it carries with it the pioneer lady graduate of the College, and perhaps the only one who has ever obtained this degree throughout the United States. This fact fully attests that our College is progressive, like all Western institutions, and this alone demands a recognition and more than a passing notice, not only on the part of the faculty, but also that of the public and the large and appreciative audience who manifests its interest in the art and science of Pharmacy by meeting here to-night.

The study of Pharmacy is not an easy one, and besides the many difficulties that present themselves in pursuit of this art students cannot pass muster in this or any other first-class College unless they have had four years of practical experience, have attended two full courses of lectures in *all* the branches taught, and have passed a searching examination by the faculty and a committee of experts selected for that purpose.

Can as much be said in behalf of any other allied science?

Notwithstanding the fact that the art of pharmacy is yet in its infancy, its influence is being gradually felt, and it is slowly but surely working its way to the top of the list of the recognized arts of the modern age.

Pharmacy is an art! Although we may not speedily see the time when such laws as should foster an honorable calling like ours will be enacted and thrown around our ranks so as to effectually exclude the hordes of charlatans and pretenders who are scattered broadcast over our land, yet we have strong hopes that this College will be the most important factor in bringing about this much-needed reform in the commonwealth of Illinois. The medical profession is under the care of a State Board. Now, why do not the representatives of the people, more especially those of Cook county, give us the same protection?

Is it because "there is no money in it?"

Have we not already made several ineffectual attempts to secure such legislation?

Do your representatives lose sight of the fact that every day your lives are becoming more and more jeopardized, not on account of the tunnel water, but by the encroachments of illiterate and pretending shopkeepers? Do you not know that it is far more dangerous to have the recipes of skillful physicians compounded by ignorant shopkeepers—shopkeepers we say, because we disdain to call them pharmacists—than it is to take the medicine ordered by a quack and dispensed by a skillful pharmacist? In the former case you are liable to get the benefit of both error of the physician and ignorance of the shopkeeper, while in the latter it does not matter how gross the error may be or how incompatible the ingredients are the skillful pharmacist stops it on his prescription counter. Yes, he very often holds a valuable life in his hand. The time has gone by when the attainments of the pharmacist are simply rated by his ability to throw the ingredients of a prescription into the bottle and hand it over the counter without the least regard to any known *rule*, *law* or *precept*.

Bear in mind that the educated pharmacist contributes in a very large degree to the success of the practitioner, that the purity of his drugs, the efficiency of his preparations and the skill with which they are dispensed *are indispensable adjuncts* to medical science.

With just as much speed as any science medicine has been advancing and pharmacy has kept even pace with it. The time has arrived when medical men and women will not extend their patronage to other than educated pharmacists, or to those who by long practice and faithful attention to business have merited the confidence of the public.

The aim of this College is to supply good, acceptable material, and that she has not failed in her purpose is fully attested by the number of successful graduates who are pursuing their avocation in your midst.

Need we give you any assurance that we will maintain this standard?

We all recognize the force of the axiom, *Ars longa, vita brevis*, and we will concentrate all our energies, marshal all our forces, and by the influence of our alumni make our presence felt throughout the greath Northwest.

Let us ask, how does the public appreciate this self-denial, this long arduous toil and study on the part of the student before he considers himself qualified to throw out his shingle and wait for business?

Does it consider that the trying examination through which he has just passed is sufficient to carry him through? We answer, No! A worse fate than that awaits him. I refer to the public quiz, which is more searching and embraces subjects belonging to a more varied curriculum than that of the best university in America or the old world.

To the stranger the pharmacist points the way to the best hotel, gives him the number of miles and running time to place of destination. He must be able to give the distance to any point on the globe, with the number of inhabitants; give a decided answer as to the sterling worth or baseness of coins, jewelry and bank notes. He must be able to find the place of residence of the oldest inhabitant in the city when the inquirer does not know the given name, although he has been searching the directory for at least half an hour; he must decide points in law, theology, history, physiology, arguments, wagers, orthography, decipher letters that the authors themselves cannot read; be familiar with the rates and postal regulations; is appealed to as adviser in family troubles; he must be posted on all the outgoings of his neighbors and incomings of strangers, give the exact time of arrival of any distinguished guest, as well as the time that the parade will pass his corner; must be posted on the fees of the physician, dentist, plumber and carpenter, and, in fact, he must be a living encyclopædia for all mankind.

Now, if the pharmacist possesses all these requirements, does the public concede that he is amply qualified to dispense drugs?

We think not; and for the sake of argument we will consider that our young friend has established himself on the corner of his choice. He gets ready for business; he has passed the College and survives the public quiz given him in the pharmacy of his preceptor. He will then be required to arrange such gratuitous accommodations as the public has demanded, may I say, since the time of Hippocrates. His red globe must be displayed to signify his bravery to withstand the rebuffs that beset him on every side. His blue globe indicates his faithfulness to his alma mater and his honesty towards his patrons. His green globe is a sign of his unfading memory and perseverance. His yellow one denotes his serenity, and either one illuminated at midnight hours is a beacon to the wayward youth, the reeling sage or the board of trade man just from the club and homeward bound.

Again, he is required to furnish the ever-useful directory, and devote a portion of his valuable time in assisting the stranger who has left his glasses at home.

He must furnish the daily papers, have his furnace steaming hot, and seats conveniently arranged for the gents who drop in, plant themselves, read the news and fill "the pharmacy" with smoke "while waiting for a car."

His match safe must be well filled, convenient to the clock, pens, ink and desk room for those who write, and "just a bit of paper" for those who are *always* in great haste to get a postage stamp; a good place to get change, the public, "while waiting for a car."

A glass of water, if you please; an old newspaper; quick, a little benzine to remove this paint; a free dose of bromide for the sleek debauch who has spent all his money for rum; the loan of a nickel to take me home; a piece of twine to tie my package; a postal card and change of $5.00 to pay it. All these are but a portion of the incessant appeals to the busy pharmacist, and all are antecedent to the prescription in hand for relieving the pangs of the darling babe, to soothe the throbbing temples of the anxious mother and more impatient nurse, to quiet the rheumatic twinges of the millionaire, while the public "wait for a car."

The spacious clothing store on one corner has no attaction for the gent, the glittering jewels on the other or the click of the sewing machine with fine display of embroidery on the third does not entice the ladies either; but both male and female with one accord crowd into the pharmacy on the corner, just to have a little chat "while waiting for a car."

The pharmacist who displays the yellow light cheerfully concedes all these favors to his patrons, but he emphatically protests against extending them to that class who make a convenience of his hospitality and reward him "by making their purchases down town."

However, let us appeal to your generosity in behalf of our young pharmacist. Give him a little rest, endeavor to lighten his cares, and in future give substantial proof of your appreciation of the faithful, public serving and ever patient pharmacist.

In the midst of our appeals for our past graduates, for the present class and the profession at large, in the commingling of our congratulations on this occasion with those of loving parents, affectionate brothers and sisters, and friends of our younger days, let us not lose sight of the fact that we sadly miss the familiar faces of two members of the faculty who were with us one year ago.

We extend our sympathies to the one whom ill health compelled to relinquish the position he so ably filled; to the memory of the other who was cut down in the prime of life, in the period of his greatest usefulness, and who has gone from us forever, we sadly but graciously bear testimony to his bright record, his moral worth, sterling integrity and all that is noble in man and colleague.

But time is fleeting. A few more words and I am done. And now,

MADAM AND GENTLEMEN OF THE GRADUATING CLASS: It affords me much pleasure to extend our congratulations to you on the success which you have attained to-night.

Your honors have not been lightly earned, for you have been required to labor hard physically, study long and faithfully, and been obliged to overcome many trials and obstacles in your path as students, as well as submit to a trying and searching examination of your proficiency before you could reach the coveted prize.

These conditions were only attained by strict attendance upon the lectures given at the College, and hard study, and full proof of your efficiency in all these requirements is attested by your presence here to-night. But thet riumph of your perseverance is now assured, and this is *your* commencement night. Justly called commencement, because the course of study through which you have just passed has been but the prelude to the life before you. To-morrow you will leave the fostering care of your alma mater, enter the arena of business life, each of you to do battle in your own right and to fulfill the destinies set before you. The time has arrived for you to put into practice what you have learned; but do not for a moment imagine that the gathering of knowledge is to cease because you leave this College to go into the world to try your fortunes.

You have just begun to learn how to study, how to put into practice the many theories given you from time to time, hence you should not fall into the common practice of laying aside your books, test-tubes and reagents, and cease to strive after knowledge, because you have reached the point of your ambition and received your degree of Ph. G. This is no empty honor, but it will cling to you while life lasts, consequently the same care, study and research that you have taken in gaining it you should apply in your future efforts to maintain everything that the title implies, and you will surely reap the same success that has attended the past graduates of this College.

Your alma mater sends you forth with full confidence that all her hopes for your future success will be realized and that her trust in you will never be betrayed. In former years it took an alloy of the metals represented by the symbols Cu and Zn to carry a war through the world, but it takes brains to do it now. I do not say that you have any of the former, but *you do possess* the latter, and also a thorough knowledge of compounding the elementary salts of the former, as your high averages will show.

The future may give us your equals, but I doubt whether it will furnish a class superior to that of 1880.

This is not a carminative dose I am placing before you, but 18 c.c. measures of fixed oil brought from the laboratory of the College, approved by the examining committee and faculty, sealed by the College and delivered to you on parchment by its worthy Vice-President. Just as your success depended on your past efforts, so will it be in the future. While the ancient philosopher has said, "That he who by the plow would thrive must *either* hold or drive," I desire you to remember "that he who by the mortar and pill machine would thrive *must not only hold*, but *also drive.*"

You are soon to be separated, the social ties of your collegiate days are soon to be severed, and as you go forth to-night the honored alumni of your College for thé year 1880, let me earnestly hope that you will not merit or receive the frown of your alma mater while you are members of the honorable profession of your choice.

I trust it is unnecessary for me to assure you that the faculty will continue to take a lively interest in your welfare, and that it will afford me much pleasure to have an opportunity of rendering you any service in the future.

I assure you no one will sympathize with you in your adversity more than I, and no one shares your joys or mingles his congratulations with yours more heartily than your humble Professor of Pharmacy. I thank you kindly for the courtesy and attention you have at all times shown me, and let me trust that the friendship that exists between us may remain "as lasting as the Rock of Ages."

In your future career may you not only become shining lights in the profession, but honorable, useful and prosperous members of the community in which you cast your lot.

Graduates, I bid you finally and most cordially *farewell.*

### RESPONSE FROM THE GRADUATING CLASS.

On the part of the class Mr. S. S. Hotchkiss responded very ably, introducing several allusions to incidents in the past course of lectures, and eloquently urging his comrades to honorably maintain the dignity about to be conferred upon them by the College.

The degree of the institution was then in a very graceful and impressive manner conferred by Vice-President, Mr. Geo. Buck, on the following persons:

JOHN F. COLEMAN.
GEO. E. DICKINSON.
WILLIAM F. DUNHAM.
RICHARD C. FRERKSEN.
SIDNEY S. HOTCHKISS.
AUGUST JACOBSON.
CHARLES J. NOHE.
EMIL OTTO.
HENRY C. PILGRIM.
WILLIAM W. PEARCE.
FRED. M. SCHMIDT.
FRED. H. SECORD.
OTTO G. STOLZ.
CHAS. S. STURGES.
EMIL THIELE.
MRS. CELIA TIRRELL.
FRED. VOEGELI.
WILLIAM W. WYCKOFF.

The gold medal offered by the Drug Clerks' Association to the graduate having the highest general average was then awarded to Mr. Otto G. Stolz, by Mr. A. G. Fleisher, President of the Association. M. Stolz replied briefly, thanking the Association for the honor received.

Next on the programme was the award of the Alumni Gold Badge, which was presented by Mr. Thos. Whitfield, Ph. G., the oldest alumnus of the College, with the following remarks:

LADIES AND GENTLEMEN: You are doubtless aware that most teaching colleges have Alumni Associations. The Chicago College of Pharmacy is not an exception. That this College is behind others in the number of its alumni is due rather to its youth than to any other cause. To prove that its worth is felt and appreciated, I have but to state that heretofore the Philadelphia College of Pharmacy, now about to hold its fifty-ninth annual commencement, and consequently the oldest College of Pharmacy in the United States, has drawn large numbers of students from the West, Illinois not failing to be well represented. During the past year, however, Philadelphia can boast of the presence of but one student from the entire State of Illinois. This I am sure proves the esteem in which our College is held at home and throughout the West, which is handsomely represented in the present class.

To make matters more interesting, our Alumni Association determined three years ago to offer annually a special prize for perfection in two branches, Chemistry and Botony. This handsome badge has now been competed for three times, twice successfully. Last year, though the averages were higher than at present, no student stood high enough to take it.

There are eighteen graduates this year. All have studied hard; tried their best, no doubt, and I am sorry that I have not been provided with nineteen badges like this. I should like to present one to each of these young gentlemen, especially one to the lady graduate, and keep one for myself.

The word Stolz in German, as many of you know, is equivalent to proud in English. Now, Mr. Stolz, you have a perfect right to feel as proud as you please over this trophy, which you have so handsomely captured, and the more so because you are the first graduate who has won the Drug Clerks' Medal and the Alumni Badge. Long may you live, Mr. Stolz, to wear this decoration and to do honor alike to your alumni mater, to the Alumni Association and to your chosen profession.

Mr. Stolz, with few words and many blushes, signified his gratitude for the increasing list of honors. As usual in such cases, Mr. Stolz had won the esteem of the whole class during the term of lectures, by his quiet studious habits and gentlemanly deportment, and hence all his comrades were well pleased by his success.

The exercises throughout were interspersed with music by the orchestra of the Freiberg Brothers.

## WRITTEN EXAMINATION—CHEMISTRY.

BY PROF. N. GRAY BARTLETT.

1. a. The equivalence of X being four, give formulas for its nitrate, sulphate and phosphate.
   b. Given, the oxides and vapor densities following:
      $X_2O$ Vapor density, 43.5 $Y_2O_3$ Vapor density, 38.
      $Z_2O_5$ Vapor density, 71.
      Required, the atomic and equivalent weights of X, Y and Z.
   c. How many liters of hydrogen, and how many of nitrogen, will result from the decomposition of ten liters of ammonia?
   d. If ten liters of oxygen be converted into ozone, how many liters will the latter measure?
   e. Mention some isomeric compounds.
2. a. Give an equation explaining the usual method of preparing chlorine.
   b. State the equivalence, the atomic and molecular weights, and the chemical and physical properties of the element.
   c. Show in an equation the reaction between chlorine and potassic hydrate.
   d. Write an equation showing the formation of hydric chloride.
   e. Mention three elements whose solutions are precipitated by hydric chloride.
3. a. Explain the chemical changes which occur in the manufacturing process for sulphuric acid.
   b. Give an equation, explaining the U. S. P. process for sulphurous acid.
   c. Indicate how a sulphite may be distinguished from a sulphate.
   d. Show by an equation the formation of hydric sulphide.
   e. What metals are precipitated as sulphides, from a hydrochloric acid solution, by hydric sulphide?
4. a. Explain, by an equation, the manufacturing process for nitric acid.
   b. Give the percentage strength of nitric acid, U. S. P.
   c. How may nitrogen dioxide be produced, and what are its properties?
   d. State the general characteristics of nitrates.

e. Give tests for the detection of nitrates.

5. a. Mention the principal compounds of silver as found native.

b. How may the pure metal be obtained from silver coin?

c. How much silver is contained in ten grams of argentic iodide?

d. What pharmaceutical use is made of $Ag\,CN$.

e. What adulterant is sometimes present in lunar caustic, and how may its presence be detected?

6. a. Mention the principal ore of mercury, and state how the metal is extracted.

b. Give, in symbols, the reactions which occur in the preparation of corrosive sublimate.

c. What impurity may be present in calomel, and how may its presence be discovered?

d. What changes, if any, occur when calomel and potassium bromide are brought together.

e. Write an equation showing the formation of mercuric iodide.

7. a. What is the manufacturing process for carbonate of sodium, from common salt?

b. How is carbonate of sodium prepared from cryolite?

c. Give the formula for, and the method of preparation of, sodium bicarbonate.

d. Explain, by an equation, the preparation of liquor sodæ, U. S. P.

e. State the method of preparing the liquor sodæ chlorinatæ, U. S. P.

8. a. Name the principal native compounds of magnesium.

b. In what manner may the metal be extracted from its compounds?

c. Give the officinal process for magnesium carbonate.

d. Give the usual method of preparation, and the formula for, epsom salt.

e. By what chemical tests may epsom salt be distinguished from sulphate of zinc?

9. a. Explain the U. S. P. process for liquor ferri nitratis.

b. What quantity of ferric oxide may be obtained from a fluid ounce of tinctura ferri chloridi, U. S. P.

c. What is the mode of preparation and the chemical nature of ferri subcarbonas, U. S. P.

d. Give the proportion of quinia in the officinal citrate of iron and quinia.

e. Give tests for ferrous and ferric compounds.

Write formulas for the following compounds:

Peroxide of hydrogen; Borax; Alum; Black antimony; Pyrophosphate of soda.

Name the elements whose atomic weights correspond with the following numbers:

39 — 40 — 63½ — 80 — 200.

From the following factors, write complete equations:

$Ca\,CO_3 + 2\,HCl = ?$ $P\,Br_5 + 4H_2O = ?$ $Pb(NO_3)_2 + 2\,KI = ?$

$Sb\,Cl_3 + H_2O = ?$ $Zn\,SO_4 + Ba\,I_2 = ?$ $As_2O_3 + 2H\,NO_3 = ?$

$2\,Ag\,NO_3 + Mg\,Cl_2 = ?$ $3\,K_2\,MnO_4 + 2H_2O = ?$

$Ca_3(PO_4)_2 + 3\,H_2\,SO_4 = ?$ $Fe_2(SO_4)_3 + 3\,Na_2\,CO_3 + 3H\ O = ?$

## LIST OF QUESTIONS IN PHARMACY

BY PROF. GEO. M. HAMBRIGHT.

A. 1. Define Weights and Measures.

2. What weights and measures do Pharmacists use in barter and dispensing, and what are the divisions of them? also, name the weights that are now recognized by the U. S. P. in compounding.

3. What is the difference in the weight of the commercial and apothecary's pound?

4. Could you use the commercial ounce weight in compounding and produce accurate results, and what modification, if any, would be necessary?

5. What is the unit of the decimal system of weights and measures? What is the unit of capacity and the unit of weight of the system? Give the divisions of the latter, and state whether there is any difference in the weight of the solid or liquid measures, and whether you could use the troy weights as substitutes for the metric weights in dispensing with any degree of accuracy.

B. 6. In the separation of mixed substances what processes do you employ as taking solids from liquids, and name three kinds of media by which you can perform all operations in the Laboratory as applied to these processes.

7. What is Clarification, and can it be effected without the application of heat?

8. Do water baths possess any advantages over any other methods of applying heat, and if so, why?

9. What is the difference between Maceration and Digestion, and are these methods of extraction applicable to all the off. tinctures?

10. What is Dialysis, how performed, and upon what law does its operation depend?

C. 11. Define Neutralization, and in what three off. preparations is it applicable?

12. What is the difference between lignin and cellulose?

13. What is the purest form of lignin, under what name is it officinal, and for what purposes in Pharmacy is it used?

14. From what source do we obtain Acetic acid? What is No. 8 acid?

15. Give process for making it, and state whether its sp. gravity is, or what would be, a reliable test for its purity.

D. 16. What is Gum, and is it a natural production, or can it be produced artificially, and from what?

17. What substances do we produce by the action of strong Nitric and dilute Sulphuric acid on gum?

18. Name two important gums and their off. preparations, and three gum-producing substances used in Pharmacy.

19. Give the names of the off. sugars and sources from which they are obtained.

20. What is Alcohol, how eliminated, and how many grades are officinal? Also give the names of four off. alcohols.

E. 21. Give the sp. gravity of "Alcohol Fortius."

22. Define absolute alcohol, and recite the phenomena that take place when equal measures of this alcohol and distilled water (at normal temperatures) are mixed; also what is the result in volume and what is the sp. gr. of this mixture.

23. How is Chloral produced?

24. Describe its physical properties and give its relative strength as compared to officinal Chloroform.

25. How many wines are recognized by the Pharmacopœia, and what useful products do we obtain from them?

F. 26. Give the composition of 4 troy ounces of "Seidlitz Mixture," and state how many "Pulveres Efferves. Aperientes" you could make from this quantity, and how much "Acidum Tartaricum" would be required to make an equal number of powders of standard strength.

27. How do you prepare "Citrate of Iron and Quinia," and how would you test its quinia strength?

28. Is "Citrate of Iron and Strychnia" a good combination, and why?

29. What important substance do we obtain from coal tar?

30. Give its physical properties and its solubility in water at 60° F.

G. 31. What are Volatile Oils, and how are they procured?

32. Name the three classes of vol. oils, and give the names of two oils of each class.

33. Give the tests for the presence of oil of turpentine, alcohol or castor oil in any of the volatile oils.

34. Give the comparison between the volatile and fixed oils and water as regards their specific weight.

35. What is the composition of volatile and fixed oils. Name the fixed oil that contains the largest amount of liquid principle and the oil that contains the smallest amount of Hydrate of Propenyl.

H. 36. Give process for making the "Emplastrum Plumbi," and name all the products resulting from the manipulation.

37. What is Glycerin, its sp. gr., and what would be the capacities of bottles in fluid ounces capable of containing one avoirdupois pound each of Glycerin and Æther of standard strength?

38. What officinal preparations of Glycerin have we?—name three.

39. Name two Fluid Extracts in which Glycerin is the preservative agent.

40. Define Emulsions, and give the average amount of gum necessary to produce a stable compound, together with the precautions suggested so as to prevent failure on the part of the manipulator.

I. 41. Name three principal alkaloids of Opium, and give process for assaying it for its morphia strength.

42. Name the three officinal salts of Morphia, giving a comparison of their solubility in water, the shape of their crystals and their characteristic color tests which distinguish them from Brucia and Codeia.

43. Give the strength of the strongest and weakest fluid preparations of Opium; likewise of the solid.
44. What relation does opium bear, in strength, to the morphia salts, and what proportion of morphia sulph. would you use in place of opium to make Dover's powder?
45. Would solutions of the lead salts be compatible with the opium preparations, and why?

J. 46. What is the strength of "Tinct. Digitalis," Tinct. Aconiti Rad.? Without giving quantities, mention all the ingredients used in preparing "Syr. Scillæ," "Syr. Pruni Virg."

47. "Tinct. Cardamomi Comp.," "Tinct. Castorei."
48. "Mistura Potassii Citratis," "Mistura Chloroformi."
49. "Pil. Saponis Comp.," "Pil. Quiniæ Sulph."
50. "Vin. Antimonii," "Suppositoria Opii."

## MATERIA MEDICA AND TOXICOLOGY.

### EXAMINATION BY PROF. H. D. GARRISON.

Define the words: (1) Cholagogue, (2) Diaphoretic, (3) Sedative, (4) Alkaloid, (5) Resin, (6) Glucoside.

Give the botanic names of the plants furnishing the following drugs: (7) Calabar beans, (8) Uva Ursi leaves, (9) Buchu leaves, (10) Jaborandi leaves, (11) Pink root, (12) Flax seed.

Give the common English names of the following plants: (13) Sinapis Alba, (14) Ulmus Fulva, (15) Nectandria Rodei, (16) Aralia Nudicaulis, (17) Asclepias Tuberosa, (18) Krameria Triandra.

(19) Describe the Rhus Radicans; (20) describe its active principle and mention the drugs employed to counteract its topical toxic action.

(21) Name in the language of commerce the principal varieties of Senna in use.

(22) Name and describe the active principle of Senna, giving a list of the principal articles incompatible with it in solution.

(23) State how Hydrochlorate of Cinchonia may be distinguished from Sulphate of Quinia; (24) also how Salicin may be distinguished from either of the above salts.

(25) State the source and appearance of Fucus Vesiculosus; (26) also the constituents on which its activity is presumed to depend.

(27) Describe the plant Conium Maculatum. (28) Give the physical and chemical properties of its leading proximate principle. (29) Describe its therapeutic action in moderate and in excessive doses. (30) State its relative abundance in various parts of the plant.

(31) Describe Golden Seal root, giving also the botanic name of the plant. (32) Mention its chief proximate constituents, and give their physical and chemical properties.

(33) Describe Aconitum Napellus, and mention its habitat. (34) State what parts of the plant are officinal, and give their relative strength. (35) Mention and briefly describe its chief proximate constituents. (36) State the maximum safe dose (to an adult) of the fluid extract of the root.

(37) Mention three Alkaloids which, if taken internally, in full doses, or applied in solution to the eye, cause dilation of the pupil. (38) Mention an Alkaloid which, under like conditions, produces an opposite effect.

(39) What symptoms are caused by excessive doses of Gelsemium? (40) Belladonna? (41) Calabar bean? (42) Veratrum Viride?

(43) Mention the maximum safe doses of fluid extracts of Digitalis; (44) Hyoscyamus.

(45) What Proximate principles are found in the bark of the Populus Tremloides?

With what articles are the following powdered drugs most frequently adulterated: (46) Jalap; (47) Elm. bark; (48) Mustard seed; (49) Rhubarb; (50) Dandelion root?

## EXAMINATION IN BOTANY.

BY PROF. EDSON S. BASTIN.

ELEMENTARY STRUCTURE.—1. Describe a vegetable cell, naming its parts, stating which are essential, and explaining how the cell wall differs from the cell contents in chemical composition. 2. Explain the difference between parenchymatous and prosenchymatous tissue. 3. State which of the following kinds of cells are parenchymatous and which prosenchymatous: cork cells, bast cells, wood cells, pith cells, and spiral ducts. 4. In what parts of an exogen are wood cells and bast cells respectively found? 5. Name and describe four different kinds of ducts, and state what uses are subserved by them in the economy of the plant. 6. Describe the cellular structure of a leaf of one of the higher plants. 7. Describe the stomata, explaining their structure and mode of action. 8. Describe the structure of an exogenous stem. 9. Describe that of an endogenous stem. 10. Compare the modes of growth of these two kinds of stems.

THE ROOT.—11. In what three important respects does a root differ from a stem in its mode of growth? 12. Explain the advantages to the root of its peculiar mode of growth. 13. Explain the difference between primary and secondary roots. 14. State which of the following kinds are primary and which secondary: the root of a carrot, the climbing rootlets of the ivy, and the tap-root of the oak. 15. Define respectively, fusiform, napiform, conical and tuberous roots. 16. How may we distinguish a root from an underground stem?

THE STEM.—17. Explain the difference between a sucker and a stolon. 18. Explain the real nature of a bud, and state where buds regularly appear. 19. How do the thorns of a honey locust or a plum tree differ, morphologically, from those of a gooseberry bush and from the prickles of a blackberry bush? 20. Explain the real natures of a potato tuber and an onion bulb. 21. Account for the rings of growth in an exogenous stem.

The Leaves.—22. Of what parts does a complete leaf consist? 23. What functions do leaves perform as foliage? 24. Explain the nature and use of chlorophyl. 25. Describe the different plans of leaf venation. 26. Name and describe five forms of leaves as respects the general outline. 27. What is the difference between a retuse and an emarginate leaf? 28. What are phyllodia, and how may they be distinguished from true leaf blades? 29. Name five other functions that leaves may perform besides that of foliage. 30. Define phyllotaxy, and name the two principal kinds. 31. Define præfoliation, and explain the meaning of the terms conduplicate, reclinate, involute and circinate, as applied to præfoliation.

The Flower.—32. Define the terms bract, spathe, involucre, peduncle and pedicel. 33. When is an inflorescence said to be definite, and when indefinite? 34. Name and define four kinds of indefinite inflorescence. 35. Explain the differences between a cyme and a raceme, a head and a glomerule. 36. Name the different parts of a complete flower, and explain their uses. 37. What is the morphological nature of the different parts of a flower, and how do you know? 38. Define the terms achlamydeous, monochlamydeous and dichlamydeous. 39. What is the difference between a choripetalous and a gamopetalous flower? 40. What are papilionaceous, orchidaceous and labiate flowers? 41. What is the difference between a syngenesious and a gynandrous flower? 42. Describe respectively ovaries with axile, parietal, and free central placentæ. 43. What is the difference between a gymnospermous and an angiospermous plant? Give examples. 44. How does a campylotropous differ from an amphitropous ovule?

The Embryo.—45. Explain the fertilization of the ovule and the origin of the embryo. 46. Name and describe the parts of which the embryo consists. 47. Explain the difference between the mode of germination of the embryo of the maple and that of the pea.

The Fruit.—48. Give a synopsis or classification of the principal kinds of fruits. 49. What kinds of fruits are the wintergreen berry, the strawberry, the fig and the orange?

Classification.—50. Give a synoptical view of the great divisions of the plant kingdom, *i.e.*, of the series, classes, sub-classes and divisions of plants.

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## ST. LOUIS COLLEGE OF PHARMACY.

The fourteenth annual commencement exercises of the St. Louis College of Pharmacy were celebrated Tuesday evening, March 16th, 1880, at Germania Hall, southwest corner of Eighth and Gratiot streets.

The President of the College, Mr. Geo. Ude, addressed the select and numerous audience in a few well chosen remarks. He adverted to the dignity, as well as antiquity, of the apothecary's profession. After congratulating the gentlemen of the graduating class, that they had reached the goal for which they had anxiously striven, he exhorted them to a faithful and conscientious performance of the duties of their chosen profession, and handed to each the diploma of the College, conferring the degree of "Ph. G." Their names are: Messrs. E. G. Bauer, V. E. Eilbracht, Zeno Felder, Julius Feickert, S. F. Flint, F. A. Graichen, E. T. Green, Edwin Grimm, A. Hamel, H. Hoyer, John P. Huhn, L. Kempf, Theo. Klipstein, Thomas Knoebel, A. A. Krusskopf, F. T. McAuliffe, A. Pohrer, A. Kohlfing, Benjamin Saenger, Emil A. Sennewald, H. Stubbemann, A. Temm, A. Troxell, Chas. Van Zandt, F. Vedder and A. Wellmeyer. The silver medal of the Alumni Association, to be awarded to the graduate who attained the highest average in all of the branches taught, was presented by Prof. J. M. Good to Mr. Emil A. Sennewald. In the accompanying remarks of the Professor he gave it as his candid opinion, that to all present appearances the tendency of medical as well as pharmaceutical colleges was to prolong the time of study, and that in this instance the recipient of the medal, although he might have passed a creditable examination at the termination of the lecture course preceding the present one, had, in order to become still more proficient, attended another course, and to this as much as to his natural aptness was due the result. The following received honorable mention: Messrs. A. A. Krusskopf, Theo. Klipstein and Thomas Knoebel.

The valedictory address delivered by Prof. Chas. O. Curtman was a masterly effort. He expatiated on the mode of education in general and that of the pharmacist in particular. He warned against superficial learning, which skips from one science to another, getting a smattering only of each and becoming thorough in none. Such might be compared to those who know a little of most all trades, but really understand none, and are popularly styled "Jack of all trades and master of none." On the other hand, the study of one science or of only one branch of a science, to the exclusion of all others, was equally to be guarded against. He called attention to the persons one is apt to meet now and then whose train of thoughts moves in but one direction—have become monomaniacs, as it were. Instances of such were, the physician who, if approached on any subject, would invariably treat you to a discourse on what a grand practice he had, or what difficult cases came to him, or the remarkable cures effected by and only possible to him. If a jurist, what an immense amount of erudition in law he possessed, and of always being sure of a jury's verdict in his favor, etc., etc. These might be styled "professional bores." Both these extremes should be strenuously avoided. The knowledge necessary to the different callings in life should be diligently and thoroughly acquired without one-sidedness and without neglecting the general information expected of an educated person. Further on he ridiculed the easy gullibility of an, in this respect, ignorant public, who would rather put faith in quack nostrums, from which it expects some wonderful, unexplainable, and, except the manufacturer, to all the balance of mankind unknown action, than in the regular physician, who makes diseases and their cure a life study. Undoubtedly the quack nostrum manufacturer had adopted the motto: "*Mundus vult decipi, ergo decipiatur.*" Lastly, he enjoined on the graduating class the necessity of constant study, to perfect and embellish the edifice of which the foundation had been laid and the framework reared, so to speak, during the lecture courses. The Professor retired amidst the plaudits of the audience.

The valedictory address in behalf of the class was delivered by Mr. S. F. Flint. He thanked the audience for their kind attention and sympathy; thanked the Board of Trustees for the facilities offered young men to the attainment of a thorough pharmaceutical education; thanked the Faculty for the pains they had taken to advance them in their studies, and exhorted his fellow-graduates to continue to cultivate friendship and appreciation among themselves as well as with the members of the profession they now entered as equals; also, to conduct themselves in the future, that the College could point to them with pride as its graduates.

The addresses were interspersed with choice pieces of music. After the numerous bouquets and other floral offerings had been distributed the balance of the evening was spent in a social reunion. The devotees of Terpsichore enjoyed themselves until the wee small hours.

G. H. CHAS. KLIE,
*Corresponding Secretary.*

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GUN COTTON is repeatedly recommended as a very convenient filtering material to take the place of asbestos and glass-wool, which are not always to be had.

# EDITORIAL.

## TAXES, DUTIES, ETC.

At this season of the year, when Congress is in session, and when as might be expected its members are casting about for means to please their constituents, so as to insure their own tenure of office and to win support to their parties, in view of the approaching Presidential contest, every clique or faction in commerce and manufacture is on the alert to secure greater immunity from taxation. The welkin has fairly rung with the cries of the press for the removal of the duty on paper and the materials used in its production. We have not taken up the refrain, and yet believe that every means of disseminating knowledge among the people should be free and as cheap as possible. Knowledge is the bulwark of safety in this country, and the general diffusion of scientific knowledge is the secret of our wonderful national growth and strength. The tax on paper and paper-making materials is a direct tax on knowledge, a check on our national progress, and therefore should be removed.

The duty hitherto imposed upon quinine, and now imposed on some varieties of bark and on the chemicals employed in the manufacture of the salts of the cinchona alkaloids, is an iniquitous tax upon the sick, and should therefore find no support in this humanitarian age. The tax on alcohol for medicinal and manufacturing purposes is alike unrighteous and impolitic. Not so, however, is the tax on patent medicines, which Congress has been petitioned by a combination of manufacturers to remove. This is a tax on ignorance, and if modified should rather be increased than lessened. We are not devoid of sympathy for the ignorant invalid who pays $1.00, of which four cents is tax, for a few ounces of stuff bearing a captivating label, and which, if properly named, would, if bought at all, only cost a few cents; but we have no sympathy with those who put up this material, and by grossly deceptive, misleading and lying advertisements induce the poor to thus squander their money. If the tax were thirty times as much on secret preparations the people would be better served and the interests of true science advanced. Let no one be deceived by the representations of manufacturers of patent medicines into the belief that their cause is that of the poor invalid. Does any one suppose that either the wholesale or retail price of these articles would be lowered by the removal of the stamp tax? Not a cent of advantage to either the customer or retail dealer is to be expected on the removal of the tax. The gain to the proprietors and manufacturers, however, will be immense, because in most cases stamps, bottles, corks and labels are the principal items of expense in preparing these nostrums for the market.

## IS PEPSIN AN EXPENSIVE PLACEBO?

Our friends of the *Chicago Medical Gazette* have been experimenting with ten different brands of pepsin, also with ingluvin, pancreatin, and various preparations and mixtures of these agents. As the result of thirty observations they conclude that *ten grains* of pepsin with five drops of muratic acid are capable of digesting *eight grains* of albumen in *twelve hours*. The best result obtained was the digestion of twenty-four grains of albumen in twelve hours and the worst was none at all. In the case of ingluvin one-half grain of albumen was dissolved for each grain of the preparation employed. Since an ounce of albumen—the hard boiled but not dried albumen of the egg being the article experimented on—would not be a large portion to be consumed at a meal by a dyspeptic, and since we may assume that the deficiency in pepsin in the stomach of said dyspeptic is, say twenty-five per cent., it follows that to supply the deficiency of digestive power the patient would be obliged to swallow *one hundred and fifty grains of pepsin and seventy-five drops of muriatic acid* at or after each meal.

But we may view this matter in another light. An ordinary stomach of an adult human being, if treated as are the stomachs of pigs (hogs) in the manufacture of pepsin, would yield from three to five ounces of the ordinary article, the quantity depending largely upon the amount of mucus, etc., included, and upon the extent of the dilution with sugar. Is it probable, in view of these facts, that a few paltry grains more or less of the saccharated stuff will make any material difference in the digestion of a square meal? We think not. But in the case of children, in some extreme cases, it is possible that a few grains more or less of albumen digested may be of great consequence. At all events, in almost all cases the use of pepsin is, no doubt, a great boon to humanity, by taking the place of absolutely injurious medication. We can therefore give it our blessing on the principle that "if it don't do any good it can't do much harm."

## AN ADVANCE IN THERAPEUTICS.

The editorial corps of the *Chicago Medical Gazette*, and especially Dr. Clevenger, have been carefully investigating the chemical and physical behavior of the mercurials. The conclusion arrived at seems to be, stated broadly, that all of these preparations not originally simply mixtures of metallic mercury with other substances are reduced completely in the organism, giving rise to millions of minute globules of mercury which are pushed and float about in the circulating fluids of the body. These statements are not put forward simply as the legitimate deductions from a theory, but as facts ascertained by actual examination of the blood of animals to which calomel or other mercurials had been given, by microscopes of high power. In the case of the simple mixtures of metallic mercury as blue mass, mercurial ointment, etc., the metal enters the circulation in obedience to physical laws, and in accordance therewith wanders about throughout the organism until it is finally expelled in the same simple condition in which it entered. The authors endeavor to explain its therapeutic action by its physical properties, but in this respect we think their explanation hardly satisfactory. Their philosophy on this point is in substance that the globules of mercury by their gravity and mobility push morbific matter through the capillaries, thus preventing its lodgment and securing its destruction by oxidation in the blood or its elimination by the excretory organs.

ONLY 4,000,000 bricks are for sale in this city, while 30,000,000 are wanted for immediate use. One company alone wants 12,000,000 for iron and steel works. We have never seen this city so overcrowded with persons seeking residences, stores, factories, etc., as at the present time.

DR. THOMAS BEVAN died suddenly, March 15th, at his office, of "acute congestion of the brain and serous effusion."

## NOTES AND QUERIES.

To **The Pharmacist.**—My friend and I getting involved in a little argument, I submit our case for your examination, if you will be so kind as to decide between us. It arose in regard to the following prescription:

| | | |
|---|---|---|
| ℞ | K I | ʒ j. |
| | $Hg\ Cl_2$ | grs. iv. |
| | $H_2\ O$ | ℥ iv. |

M.—Sig, teaspoonful three times per day.

My views were that it is a chemical mixture, and that instead of giving ⅛ gr. of $Hg\ Cl_2$, as prescribed (if borne out in my statement), we find we are giving .44 + of a grain of the $Hg\ I_2$ (of biniodide of mercury).

The result of such a mixture would be, according to my figures, about

| | |
|---|---|
| Iodide Pot | grs. 55.1+ |
| Biniodid Hydrarg | grs. 6.7+ |
| Chloride Pot | 2.03+ |
| Water | ℥ iv. |

Judging by home practitioners and druggists that there are many ignorant of the true change that takes place in prescribing the two agents in combination, I should deem this worthy of publication.

Truly, James B. Hanmore.

New Haven, Ill., March 15.

You are right in regard to your theory of double decomposition, $Hg\ I_2$ and K Cl would be formed, the former being held in solution by the excess of iodide of potassium in the mixture. We think you have made a slight mistake in regard to the size of the dose of $Hg\ I_2$, which would be $6.7 \div 32 = .2094$ or a trifle over 1-5 of a grain at each dose.

**Situations.**—We frequently receive letters asking us to secure situations for clerks living in the country and in distant cities. It is impossible to comply with such requests. Whoever wants a situation in this city must present himself in person, submit his credentials and perhaps submit to some examination as to his ability by the employer. The appearance of a clerk, his dress and address, the color of his eyes and even the tone of his voice are particulars which all shrewd employers consider in their estimate of the fitness and value of a clerk.

I. Q. T. asks if black clothing is really warmer than white, and if so why the Creator clothed most of the polar animals in white? It is warmer because black reflects no light, all of which is apparently destroyed, but in reality is converted into heat. The white color of most animals inhabiting regions usually covered with snow has been given, or as we should say acquired, to enable the animals to hide from their foes in some cases, and in others to enable them to approach their prey unperceived.

## "LAWS REGULATING THE SALE OF POISONS."

### MICHIGAN.

"7732. § 1. *The People of the State of Michigan enact,* That every apothecary, druggist, or other person who sells any arsenic, strychnine, corrosive sublimate, prussic acid, or other poison, shall keep a record of the date of such sale, the article and amount thereof sold, and the person or persons to whom delivered, and their residence; which record shall be open to the inspection of any police officer or physician during the business hours of each day. And each and every neglect to keep such record, as herein provided, shall be deemed a misdemeanor, and the person or persons guilty thereof shall, upon conviction thereof, be liable to a fine not exceeding fifty dollars.

"7733. § 2. The giving a false or fictitious name to the apothecary, druggist, or other person from whom such poison was purchased, shall be deemed a misdemeanor, and the person or persons guilty thereof shall, upon conviction thereof, be liable to a fine not exceeding fifty dollars."

"7730. § 5. Every apothecary, druggist, or other person who shall sell and deliver at retail any arsenic, corrosive sublimate, prussic acid, or any other substance or liquid usually denominated poisonous, without having the word 'poison,' and the true name thereof, and the name of some simple antidote, if any is known, written or printed upon a label attached to the vial, box or parcel containing the same, shall be punished by a fine not exceeding one hundred dollars."

AN ACT to prevent the advertisement and sale of drugs or medicines designed to produce criminal abortion.

"§ 1. *The People of the State of Michigan enact,* That no person shall in any manner, except as hereinafter provided, advertise, publish, sell, or publicly expose for sale any pills, powders, drugs, or combination of drugs, designed expressly for the use of females for the purpose of procuring an abortion.

"§ 2. Any drug or medicine known to be designed and expressly prepared for producing an abortion shall only be sold upon the written prescription of an established practicing physician of the city, village or township in which the sale is made; and the druggist or dealer selling the same shall, in a book provided for that purpose, register the name of the purchaser, the date of the sale, the kind and quantity of the medicine sold, and the name and residence of the physician prescribing the same.

"§ 3. Any person violating any of the provisions of this act shall, upon conviction thereof, be punished by a fine of not less than twenty-five nor more than one hundred dollars, in the discretion of the court."

### ILLINOIS.—CRIMINAL CODE.

"§ 62. Every druggist or other person who shall sell and deliver any arsenic, strychnine, corrosive sublimate, prussic acid or other substance or liquid usually denominated as poisonous, without having the word 'poison' written or printed upon a label attached to the phial or parcel in which such drug is contained, or shall sell and deliver any drug or medicine other than upon the prescription of a physician, without having the name of such drug or medicine printed or written upon a label attached to the phial or parcel containing the same, shall be fined not exceeding $25.

"§ 63. If any druggist or other person sells or gives away any arsenic, strychnine, corrosive sublimate or prussic acid, without the written prescription of a physician, and fails to keep a record of the date of such sale or gift, the article and amount thereof sold or given away, and the person to whom delivered, he shall be fined not exceeding $50 for each neglect. Whoever purchases any such poison and gives a false or fictitious name shall be punished in the same manner.

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## WISCONSIN.

"No druggist, apothecary or other person, except practicing physicians in their ordinary practice, shall sell or give away, except upon the order or prescription of a practicing physician, any article or articles belonging to the class usually known as poisons, without first registering in a book kept therefor the name, age and sex of the person obtaining such poison, the quantity sold, the purpose for which it is required, the day and date when delivered and the name and place of abode of the person for whom it is intended, and carefully marking the word 'poison' upon the label or wrapper of each phial, box or package; and no such person shall sell or give away any such article of poison to any minor, except upon the order or prescription of a physician. Every person violating any of the provisions of this section shall forfeit for each such violation not less than twenty nor more than one hundred dollars.

## KANSAS.

Selling Poisons without labels or to minors.

Chapter 31, 2,008, 3, (§ 26.)

"Every person who shall sell or deliver to any other, any arsenic, corrosive sublimate, prussic acid, or any other substance or liquid usually denominated poisonous, without having the word 'poison' plainly written or printed on a label attached to the vial, box, vessel or package containing the same; or who shall sell or deliver any tartar emetic, without having the true name written or printed on a label and attached to the vial, box, vessel or package containing the same; or who shall sell or deliver any such substance or liquid to any minor, without a written permission from the guardian of such minor, specifying the kind of drug that such minor is authorized to purchase, shall on conviction be adjudged guilty of a misdemeanor and punished by fine not exceeding fifty dollars.

Practicing physician not required to label. 2,009, (§ 261.)

"So much of the preceding section as requires the word 'poison' or the name of the drug sold or delivered to be labeled on the box, vial or other package containing the same, shall not extend to any practicing physician who shall deliver any of the articles therein mentioned, with a prescription for the use of the article.

MINNESOTA.

"AN ACT requiring druggists or other persons selling poisons to *keep a record* of the name of the person to whom sold, the amount sold, and date."

"§ 1. If any druggist or other person sells or gives away any *arsenic*, *strychnine*, *corrosive sublimate or prussic acid*, *not* upon the *written prescription* of a *physician*, and *fails* to keep a record of the *date* of such sale or gift, the *article*, and *amount* thereof, sold or given away, and the *person* to whom delivered, he shall be fined not exceeding *fifty dollars* ($50) for *each* neglect.

"§ 2. Whoever purchases such poison and gives a *false* or *fictitious* name shall be punished in the same manner, by a fine not exceeding *fifty dollars* ($50)."

The poison law of Nebraska is very stringent and complete, requiring a register to be kept, etc.

Indiana, Iowa and Missouri are said to be without laws on this subject.

There is in Illinois a law against selling abortive medicines somewhat similar to that of Michigan.

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WHAT IS THE CAUSE?—A very intelligent and highly educated lady now in this city is utterly prostrated and apparently at the point of death from, as she believes, simply passing by a building which was being painted. Of course she would not have thought of this as a cause had not the same attacks on a dozen or more previous occasions followed exposure to fresh paint in various ways. We suggested that the turpentine might be the cause, but she declares that varnish smelling of turpentine never affected her. We suggested further that since carbonate and other preparations of lead used as pigments are not volatile they could not be the cause of her illness, but she insists that the proof is so conclusive that she cannot doubt that the lead in some way affects her. Until convinced by further evidence we must believe that there is no further relation between the supposed cause and effect than coincidence in time, but still deem it possible that the odor of newly applied paint may contain some particles of lead or other noxious substance which chemical reagents have not detected. The fact that most of us are not affected to a recognizable extent under the same circumstances has only negative value. We know of persons who cannot dispense a dose of Dovers' powder without suffering thereafter great embarrassment of breathing, similar to an attack of asthma, caused by the ipecac in this preparation, and yet most of us are wholly unaffected by breathing considerable quantities of the dust of this drug.

THE SAWYER ELECTRIC LIGHT.—According to a late dispatch, Prof. W. E. Sawyer has succeeded in producing very perfect and economical electric lights of about twenty-five candle power, which is about twice the intensity of an ordinary gas jet. Like the Sawyer-Mann lamp, the device now used by Prof. Sawyer consists of a carbon pencil "seven inches long by one and one-fourth inches diameter," heated to incandescence in a globe or glass cell filled with nitrogen and hermetically sealed. If the pencil is as large as set forth, only the point of it in contact probably with another piece of carbon could be heated to incandescence. The entire lamp is said to cost but $1.25, and new pencils, which must be supplied at a minimum of every three months and at a maximum every two years, together with refilling the cell with nitrogen, cost about twelve cents. The light can be increased or decreased and the amount measured, it is said, very easily and perfectly. The cost is the same as for gas at forty cents per thousand cubic feet.

Like several other flashy announcements of this kind, this sounds altogether too good to be wholly true. The millions of molecules of nitrogen gas in such a cell, stimulated to a very high degree of physical activity by the glowing carbon, will certainly soon wear or "wash" off enough of the latter and deposit the same on the glass to give it something of a smoked glass appearance, besides the fact that the carbon must be renewed in three months, or at best in two years, shows a waste which can only occur in the form of dust, as above mentioned, or in the formation of nitrogen compounds of carbon, which, like cyanogen (C N), being gaseous, would indicate danger of explosions, unless some kind of safety valve attachment is provided. With so many great minds at work on the subject, the final success of the electric light in place of gas for general illuminating purposes seems to be assured.

**PROF. SHARPLES' DULLNESS.**—In our February number we mentioned that Prof. Sharples, of Boston, was accused, while acting as milk inspector, of selling to the milkmen recipes for adulterating milk. Being interviewed by the Boston *Herald* reporter (January 11th), the Professor substantially admitted all the charges against him, and attempted to justify his course by the plea that what he recommended would prove less injurious to consumers than other things which milkmen would be likely to use for the same purpose. To prevent early souring he advised them to add a teaspoonful of bicarbonate of sodium to each can of milk, and to impart a rich creamy color to thin, blue, skimmed milk he recommended the use of annotto dissolved in a solution of caustic potassa. By both of these acts and for each repetition of the same he rendered himself, together with all those who followed his advice, liable to a fine of $100, and at the same time perjured his oath as a public officer.

Since annotto, or annatto, is now so widely known, and we suspect very largely used as a coloring for milk and butter and cheese, a convenient test for it must prove acceptable. It is but slightly soluble in water, which it colors yellow, but is quite freely soluble in alcohol, ether, fixed oils and solutions of the alkalies, and to a less extent in solutions of the alkaline carbonates. Concentrated sulphuric acid added to it causes a decided and somewhat peculiar blue discoloration, which is quite characteristic. Nitric acid acting upon annatto produces a musk-like odoriferous body and causes a yellowish color, which in some cases may prove confirmatory of the chief test by sulphuric acid.

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**ABUSE OF CHARITY.**—It is stated that fully twenty-five thousand persons in this city rely quite exclusively on dispensaries, infirmaries, clinics, etc., for medical advice and medicines, which of course they obtain gratuitously. The expense of these various charities is partly borne by our philanthropists, who as a rule are too busy to ask what is to be done with their donations, and partly by taxation. The loss inflicted on physicians and pharmacists by this system of wholesale charity is very considerable, while the effect on the community is decidedly demoralizing. Of these charity patients probably nine-tenths are able to pay reasonable prices, while not a few of them are rich. If a surgeon now asks for a fee he is never surprised to hear his patient say, "The idea of paying you so much. I'll go to Prof. ——'s Clinic and have the operation performed for nothing. Is not Prof. —— a good surgeon?" In New York City the expense of medical charities, including but very little for salaries of nurses, house physicians, etc., is over five million dollars per annum. Surely, reform is needed in this matter.

A VERY large factory for glucose is about to be erected in this city.

HENRY FULLER is making a tour through Europe.

## BOOK NOTICES.

*Poison Register*, including a Concise Account of the Chief Tests and Antidotes of the Principal Poisons. Compiled and published by Jno. H. Nelson, Cleveland, O. Price, postpaid, $1.50.

This work of nearly three hundred pages is designed for registering the ordinary small sales of poisonous substances, and accordingly is so ruled as to make the execution expeditious and the work complete. The headings running across the top of the pages are as follows: Date, time, name of poison, quantity, for what purpose, age, sex, color, name of purchaser, residence of purchaser, from whom purchased, witness signature.

The work begins by giving a list of poisons and their antidotes. Poisons are classified as non-metallic, metallic, narcotic, and unclassified· Among the non-metallic poisons we observe potassium, sodium, aluminium and barium compounds and salts, although why the compounds of these well known metals should be called "non-metallic poisons" is a conundrum too hard for us.

Among narcotic poisons we notice hyoscyamus, opium, morphia and its salts and prussic acid. Why belladonna, in the unclassified list, and stramonium (not mentioned) should not have gone into the same category with hyoscyamus is not evident to us. Alcohol, camphor, mezereon and quinia hardly deserve to rank as poisons. These errors and a few of orthography are of trifling importance. Altogether we think the work entirely practical and almost a *sine qua non* in every well regulated drug store. Elsewhere we reprint the poison laws of this and several other Western States, chiefly copied from this book, which contains the laws of all the States on this subject.

*Prescription Department Notice.* Devised and published by Jno. H. Nelson, Pharmaceutical Book publisher, Cleveland, O. Price, prepaid, 50 cents.

This notice is about the size and shape of an ordinary diploma or certificate of membership and is very handsomely engraved, combining in the design figures of spatulas, mortar, balance, graduate, books, etc. The notice is designed to be placed in front of the prescription counter in full view of the customers. It begins thus: "Please do not ask any questions. In the compounding of prescriptions we use only drugs of known purity. No person in our employ is allowed to prepare prescriptions unless thoroughly competent. When we have not the article or articles named in the prescription we will inform you of it, and we pledge you our word on our honor that we will not either omit an article or substitute one." In like manner, in eight additional paragraphs, the notice proceeds to notify the reader that the prescription will be prepared very carefully, as quickly as possible, in a cleanly manner and without the slightest alteration. The reader is further warned that if the dispenser should look at a book, this act is not to be construed as an evidence of lack of ready knowledge of the subject in hand, but as a means of reassuring himself as to formulas, synonyms, etc. Altogether we think the notice a good thing, worthy of being displayed both before and behind the prescription counter.

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A FLY-CATCHING PLANT.—We have one plant in our garden, says Knapp in his *Journal of a Naturalist*, a native of North America, than which none can be more cruelly destructive of insect life, the dog's-bane (*Apocynum androsæmifolium*) which is generally conducive to the death of every fly that settles upon it. Allured by the honey on the nectary of the expanded blossom, the instant the trunk is protruded to feed on it the filaments close, and, catching the fly by the extremity of its proboscis, detain the poor prisoner, writhing in protracted struggles, till released by death—a death apparently occasioned by exhaustion alone; the filaments then relax, and the body falls to the ground. The plant will at times be dusky from the numbers of imprisoned wretches.—*Scientific American.*

## REVIEW OF CHICAGO DRUG MARKET.

**Jobbers report the trade as fairly good in all respects. Within the past week there has been a material advance in opium, due to reports of the partial failure of the crop of poppy plants sown last fall, and the consequent anticipation of a diminished stock of the drug. Large holders have withdrawn their stocks of opium from the market, and the price has been advanced to $7.25 per pound in first hands in New York. According to a cablegram just received, opium cannot now be imported at less than $8 per pound.**

| | | |
|---|---|---|
| **Acid, Nitric** | lb. | 12 @ 14 |
| “ **Tartaric** | “ | 53 @ 55 |
| **Aloes** | “ | 17 @ 50 |
| **Amm., Carbonate** | “ | 22 @ 25 |
| “ **Muriate** | “ | 14 @ 16 |
| **Bleaching Powder** | “ | 4 @ 5 |
| **Blue Vitriol** | “ | 11 @ 12 |
| **Borax** | “ | 12½ @ 13 |
| **Camphor** | “ | 35 |
| **Cantharides** | “ | 1.35 @ 1.50 |
| **Cassia** | “ | 25 @ 30 |
| **Castile Soap** | “ | 8½ @ 18 |
| **Chamomile Flowers** | “ | 30 @ 40 |
| **Cinchonidia, oz. bots** | oz. | @ 1.15 |
| **Cloves** | lb. | 43 @ 45 |
| **Cream Tartar (pure)** | “ | 36 @ 38 |
| **Cubebs** | “ | 22 @ 25 |
| **Cuttle Fish Bone** | “ | 26 @ 28 |
| **Ergot** | “ | 75 @ 85 |
| **Ginger, Afr** | “ | 10 @ 15 |
| “ **Jam** | “ | 25 @ 30 |
| **Glycerin** | “ | 18½ @ 85 |
| **Insect Po** | “ | 65 @ 75 |
| **Iodine, Resub** | “ | 6.50 @ 6.75 |
| **Ipecacuanha Po** | “ | 1.65 |
| | | |
| **Mercurials—** | | |
| **Blue Pill** | “ | 55 |
| **Calomel** | “ | 75 @ 80 |
| **Corrosive Sub** | “ | 65 @ 70 |
| **Mercurial Oint** | “ | 52 @ 60 |
| **Red Precipitate** | “ | 85 @ 90 |
| **Morphia Sul. P. & W.** | ⅛ oz. | 4.85 @ 5.00 |
| **Nutmegs** | lb. | 1.10 |
| **Oil, Anise** | “ | 3.40 @ 3.50 |

| | | |
|---|---|---|
| **Arnica Flowers** | lb. | 18 @ 20 |
| **Assafœtida** | “ | 23 @ 25 |
| **Balsam Copaiba** | “ | 75 @ 78 |
| “ **Tolu** | “ | 85 @ 90 |
| **Bees-wax** | “ | 30 @ 33 |
| **Oil Bergamot** | “ | 3.25 @ 3.50 |
| “ **Cassia** | “ | 1.50 @ 1.60 |
| “ **Castor** | gll. | 80 @ 90 |
| “ **Lemon** | lb. | 3.50 @ 3.75 |
| “ **Olive** | gll. | 80 @ 3.50 |
| “ **Pennyroyal** | lb. | 1.25 @ 1.30 |
| “ **Peppermint** | “ | 3.25 @ 3.50 |
| “ **Sperm (pure)** | gll. | 1.40 @ 1.45 |
| “ **Wintergreen** | lb. | 3.25 @ 3.50 |
| “ **Roses** | oz. | 5.00 @ 8.00 |
| **Opium** | lb. | 7.00 @ 7.50 |
| **Pepper, Cayenne** | “ | 25 @ 28 |
| **Potass., Bromide** | “ | 40 @ 45 |
| “ **Chlorate** | “ | 22 @ 25 |
| “ **Iodide** | “ | 4.75 @ 5.00 |
| **Quicksilver** | “ | 55 @ 60 |
| **Quinine, P. & W., 1 oz. btls.** | | 3.35 @ 3.40 |
| **Salicin, 1 oz. vials** | oz. | 45 @ 50 |
| **Santonin, 1 oz. vials** | “ | 85 @ 90 |
| **Seed, Canary** | lb. | 4 @ 5 |
| “ **Hemp** | “ | 4 @ 5 |
| **Senna** | “ | 18 @ 25 |
| **Seneka Root** | “ | 80 @ 90 |
| **Shellac** | “ | 45 @ 52 |
| **Soda, Bicarb** | “ | 4½ @ 6 |
| “ **Sal** | “ | 1¾ @ 3 |
| **Squills** | “ | 14 @ 16 |
| **Sugar, Lead, white** | “ | 18 @ 20 |
| **Tonqua Beans, Angostura** | “ | 1.85 |

THE PHARMACIST.

VOL. XIII. CHICAGO, MAY, 1880. No. 5.

# THE RELATIONS OF THE DOCTOR TO THE PHARMACIST.

MOUNT VESUVIUS, Feb. 20, 1880.

MR. EDITOR: Has the awful suspicion ever dawned upon your consciousness that the relations which exist between physicians and druggists are not entirely satisfactory? Up our way the subject is being very thoroughly discussed, especially by the unemployed and unappreciated practitioners. They seem to be of one opinion and one determination: "The prevailing villainy of druggists is responsible for the prevailing raggedness of doctors, and, by the Eternal, the druggists must go." Our medical periodicals—the weaker ones principally—are agitating the subject also. The editorials are, of course, strongly in favor of the unemployed, and they tend to encourage the continuance of plaintive, lugubrious communications, in which the writers call attention to the cankering sorrows of their dreary lives. How is it with you? For myself, although compelled, in consideration of the demands of fraternal loyalty, to give the druggists a kick, I declare I have been worsted every time I have undertaken to argue with them. They claim that we physicians ignore the necessities of their business prosperity; that we regard the situation exclusively from the standpoint of our own interests; and that we insist on revolutionizing their business for our own sakes, and without offering them any compensating advantage. Some of these fellows are intolerably impudent. On one or two occasions I have found it necessary to remind them of their dependence on our patronage; but they laughed at me in a very disrespecful way, and said that they guessed they could live without my patronage as well as I could without theirs. When I appealed to their reason, and showed them how essential a good prescription trade was to the very existence of their business, they said I was entirely mistaken; that their prescription business afforded but a small part of their profits, and that a good general trade was more pleasant and profitable and less laborious. They would not subordinate the latter to the former, therefore, nor sacrifice it in order to secure the good will and patronage of any doctor. Now, Mr. Editor, what is one to do under such circumstances? Of course, I do not yield an inch to these fellows, but their assumption of independence is just as exasperating as it is unfounded. I am satisfied they are "trembling in their boots" in dread of a combined effort on the part of the profession to retaliate for their villainous practices, but they pretend to be utterly indifferent. They say that the differences at present existing between them and us are irremovable, for they are based on a natural instinct of humanity to get all the money possible. It is quite useless to appeal to their sense of honor, I am sure. They are utterly insensible to appeals of that sort. I took occasion once to snub a party of them who were talking grandiloquently of "our profession" — meaning thereby, Pharmacy. "Your profession?" I said scornfully; "there isn't an educated one among you. You are a profession of prescription repeaters, patent medicine venders and hair oil makers. You don't stop at anything, from counter prescribing to substituting, that will put a few extra pennies into your pockets." That floored them completely. One of them, Mr. Snipper by name, regained his self-possession sufficiently to say: "Why, my dear sir, we spend more time in preparing ourselves for our work than two-thirds of you doctors have done. There isn't one in ten of you who could sustain the examinations we have had to sustain in order to get our diplomas; and we don't pretend to belong to a very learned profession, either." I ignored this offensive remark altogether, and simply repeated, as contemptuously as I could, "Prescription repeating! counter prescribing and substituting!" In a few seconds Mr. Snipper, whose manner had changed entirely, said, with great sweetness: "You don't seem to like it, sir." "No," I said, "I don't like it." "That's too bad," he replied; "what's wrong about it?" "Wrong?" I answered;

"wrong? Have you the impudence to look me in the face and defend prescription repeating?" "Certainly I have," he said; "certainly I have. We can't help that, doctor. We have to conduct our business prudently, so as to keep our customers. Prescription repeating isn't safe, and indiscriminate repeating isn't proper; but the patient assumes all the responsibility, relieving us as completely as he does you. We assume no more than we do when selling a bottle of patent medicine. In exceptional cases, when we have reason to regard the continued use of a mixture as dangerous, we so admonish the patient, and advise him to consult the doctor." (I remember having had patients referred to me in this way by Snipper, but considered it prudent to say nothing about it.) "But even then," he continued, "if the man should insist on having the medicines, we have to yield to the inevitable and give it to him. You see, doctor, he owns the prescription. He has a right to give it away, destroy it, keep it unused, or use it twenty times. It is his property. If I should refuse to repeat it for him I would offend him. He would at once demand a copy and get it prepared at some other store. He would never come near me again. Do you expect me to drive my customers away in vain attempts to put an extra dollar now and then into your pocket? I won't do it, sir. This is an abuse, doctor, I know—an imposition; but we are not more responsible for its existence than you. We are unable to stop it; and, inasmuch as it is money in our pockets, we do not care about exerting ourselves to stop it." Here I interrupted him with a scathing remark on the low, groveling nature of his business, its catch-penny devices, etc., but he stopped me with a coarse laugh, and said: "Pshaw! you cannot put this question on high moral grounds, doctor, for there's not a druggist in the land who does not know that the sole animus of all this agitation is a desire on the part of impecunious doctors to get an extra dollar or two. The fact is, though, that we would be glad to help your profession if we could do so without injuring our own business. Label your prescriptions 'dangerous—not to be repeated!' and I warrant you there would be very little repeating done afterward. The patient would be afraid to risk it, and he would not do so without consulting you. That device would afford us the means of protecting you without offending our patrons. Don't you see, doctor? If you don't inaugurate some such plan as this, you'll have to resort to less convenient and objectionable measures in order to stop the evil. You'll have to dispense your own medicines, or invent a system of signs which will be understood by only a few druggists and those who are pledged against unauthorized repeating. Don't you see, doctor?" "No," I said, "I don't see" (though the fact is, I considered it advisable to change the subject); "I suppose you'll expect me to 'see' that your contemptible system of counter prescribing is unavoidable, too, if not indispensable." "Oh! not quite so strong as that, doctor," said the imperturbable Snipper; "it is, in the great majority of instances, however, warrantable, and, in the light of business interests, unavoidable." I was so shocked by this declaration—shocked and disgusted, sir—that I couldn't utter a word, save "You impudent, conscienceless rascal!" Snipper colored up a little at this, but as he was a very slight and delicate fellow I didn't mind it. In a moment he regained his self-control and asked, in a very obsequious way, if I considered it much worse than for a doctor, and an officer in a medical society at that, to insist on receiving twenty-five per cent. of the profits accruing from his prescriptions. That was mean of Snipper. The fact is, Mr. Editor, that I had made this proposition to him a year before, and he refused it. I adjured him with great austerity to be a gentleman if he could, and to avoid personalities. He smiled a long time at me, and looked so idiotic that I had to turn my face away. By-and-by he remarked steadily: "Yes, doctor, so long as counter prescribing pays better than the patronage of physicians it will be persisted in by druggists. I don't do it myself, for I don't think it is right, morally; but with many druggists, as with many doctors (and he looked at me idiotically again); sentiment is one thing and business is another. They are after money, money, money. A sick person looks high and low for economy before the idea occurs to him that he may find it in a doctor's office; and this is especially apt to be the case if the sick person have the gonorrhœa. He knows that you'll extort all you can from him, and he simply determines, as he has a right to do, to try the least expensive measures first. He exhausts the therapeutic resources of his friends before he goes to the druggist, and he goes to the druggist in order to avoid, if possible, going to the doctor. What is there wrong about it? Why, after all, is a druggist more censurable, under such circumstances, for selling a mixture of his own manufacture than he would be for selling somebody's patented specific? The patient knows what he is doing perfectly well, and the druggist takes good care not to do serious harm. If, after using two or three of these shot-gun prescriptions, the patient makes no improvement, he yields to the inevitable, and consults a physician. But if recovery ensue in a few days he congratulates himself on having saved ten or fifteen dollars. Whether you regard this counter prescribing as reprehensible or not, doctor, it will certainly be practiced, if there be no law to prevent it, as long as the sick continue to be their own masters, and as long as the druggists find it more profitable than the good opinion of doctors. Druggists, when they prescribe, do so in obedience to a demand. They do as well as they can. They do not occupy the position of advertisers or impostors. Why is it wrong for them to try to cure a sick person when the person does not want to go to a doctor? Should they compel him to go? I don't approve of this business, doctor, but it has two sides. How can it be stopped?" Long before Snipper had concluded I had assumed an air of dignified indifference and inattention, and when he asked me the question, pretending not to hear it all, I went right on with the remark: "Sir, I have known druggists to write vaccination certificates and death certificates, and to sign them 'Doctor;' I have known druggists to criticise my prescriptions and my qualifications in the presence of my patients; I have known them to advise patients to go to some other doctor, and in one or two instances I have known them to take patients from a doctor themselves; I have known them often to put up an eight-ounce mixture, or forty powders, when only one-fourth the quantity had been ordered; I have known them to substitute cinchonia for quinia, their 'own make' for Squibb's, cheap and impure chloroform and ether for the the quality prescribed, and worthless pepsin that cost them twenty cents an ounce for the article specified, which cost them, if they had it at all, $1.50 an ounce; I have known them to leave out an important article because they did not have it in stock; I have known them to substitute in various ways; I have known them to put in half the quantity of some expensive substance and charge for the full amount; I have known them to vilify physicians in almost every conceivable way. Perhaps these things are warrantable, too, 'and, in the light of business interests, unavoidable?'" "No," Snipper replied; "no, doctor. Druggists, as a class, do not interfere with doctors. They do not vilify them. They do not abuse their confidence. They do not trifle with the lives of their patrons. You know that, doctor. Unquestionably there are druggists who are unscrupulous to the last degree, and who do everything you have charged. But do not make the whole pharmaceutical profession responsible for their acts. Moreover, physicians injure one another by innuendo and open disparagement; and they injure druggists, in the same way, quite as often as druggists injure them. The two professions are not to be distinguished by the unvarying rectitude of the one and the unvarying crookedness of the other. In both, the respectable, well-meaning and well-doing element is largely preponderant. You denounce or indorse a druggist as untrustworthy or trustworthy. Haven't I the same right to pass opinion on a doctor when my opinion is desired? Understand that I do not excuse these dishonest practices at all. They ought to be, and they are, regarded as crimes. But, doctor, purge your own ranks before you assail ours. If you point to a villain, I will point to two abortionists, and three 'respectable' physicians (no offense, doctor,) who insist on receiving from twenty-five to forty per cent. of the profits derived from their prescriptions. Why, THE CHICAGO PHARMACIST, a very respectable periodical, openly charges that in that city—which is a model of righteousness as compared with St. Louis and other places—the current rates of extortion are exactly those I have named. The element of respectability is no larger, relatively, in your profession than it is in mine, doctor. You can avoid the dangers of substitution, and other species of swindling, by patronizing responsible men. Of course, mistakes will happen, and they are as apt to happen to a competent and conscientious physician as they are to a competent and conscientious pharmacist. When they do happen to a physician the druggist protects him if he detects the blunder. But, doctor, you are not so ready to treat the druggist indulgently. Do you remember last week, when you wrote for liquor plumbi subacetatis instead of for liquor ammonii acetatis? You told your patient that that was my blunder. Was that right? I don't mind it much, but I defended myself, of course; and I am afraid your patient has a poorer opinion of you than he had previously. But it is your own fault, doctor. The various species of thievery that are practiced by irresponsible druggists are, to some extent, encouraged by you physicians. I haven't forgotten, sir, that you advised Skrimper to go down to Bowdry's place to have his prescriptions prepared, because he could get his medicines cheap there. Economical patients are apt to do that sort of thing, anyway, but when a physician encourages the idea of cheap medicine he probably puts the idea of short weight and measure, or of substituting a cheap for an expensive article of the same name, into the head of the ——." I would not stop to hear the finish of the insolent harangue, and I departed with expressions of contempt on my lips for the whole crew of swindling pharmacists. But, Mr. Editor, where is Snipper wrong? How can I answer his arguments? He really is a competent fellow, and, barring a slight disposition to be personal, he is good-hearted. He admits everything, you see; but he can give as vigorous a thrust as I can, and make as vigorous a defense, too. How do the unemployed down your way get along? The druggists up here are too sharp for anything. Please answer at your earliest convenience, but be sure to give me facts and arguments. The dishonesty of druggists is certainly a fruitful source of disappointment to physicians, and every practitioner should be on the alert for the detection of error and fraud. But, Mr. Editor, do you consider it our duty to forego the little "twenty-five per cent.," and in order to escape the dangers of imposition, to patronize the aggressive, independent, high-toned fellows exclusively?—*Chicago Medical Gazette.*

## HOW URARI IS MADE.

Dr. Richard Schomburgk, the director to the Adelaide Botanical Gardens, has just published a *brochure* in which he states what is known as to the method of preparing urari or curare, the famous deadly arrow-poison of some of the Indian tribes in British Guiana. His brother, in 1837, vainly endeavored to witness the manufacture of this poison; but Dr. Schomburgk himself, in a visit to the Canuku Mountains, near Pirara, in 3° 33′ N. and 56° 16′ W., succeeded in getting an old Macusi Indian to show him the method of manufacture among that tribe. The Indian, after promising to comply with Dr. Schomburgk's request, tried every possible means of evasion, but the addition of more powder and knives brought him to the scratch. The process was carried out in a small hut in the village, known as the urari house. The Indian began first to take the bark from the strychnos, which they had brought from the Ilamikipang, and then produced the other ingredients and separated the required quantities. The native names of the other plants used are tarvieng, wakarimo and tararemu, to all appearances species of strychnos. The Indian said they grew far away in the mountains at five days' distance. The proportion of the several ingredients would be according to weight as follows: Bark of Strychnos toxifera, 2 ℔.; Strychnos Schomburgkii, ¼ ℔.; arimaru (Strychnos cogens), ¼ ℔.; wakarimo, ¼ ℔.; root of tarvieng, ½ oz.; root of tararemu, ½ oz.; the fleshy root of muramu (Cissus spec.); four small pieces of wood of a tree of the species of Xanthoxyleæ, called manuca. The old Indian, having finished his preparations, went to his hut and returned with a new earthen pot, holding about seven quarts, and two smaller ones, also quite new, formed like flat pans. In the first vessel the poison was to be boiled; in the other it was to be exposed to the sun for condensation. The great strainer or funnel, made out of palm leaves, was cleaned, and fresh silk-grass was put into it to strain the fluid; a great block of wood sunk into the ground to serve as a mortar was cleaned, and in it the several ingredients were crushed. The urari preparer, after having arranged everything, built a hearth with three stones, laid the wood ready to light the fire, and went away to fetch (as Dr. Schomburgk was informed, for he had not exchanged a single word with the old Indian) the utensils to light the fire, though there was a large fire burning, which was of no use, having been lighted by profane hands. Neither dared the Indian use any water except that brought in the pot to be used for the operation; in fact, no other implement could be used but such as has been made by the cook, neither would he have assistance from any of the inhabitants. Any transgression of the sacred rules would nullify the operation of the poison. In addition to the fleshy root of the muramu, he crushed the several kinds of bark, but each one singly, on the mortar, lighted the carefully piled-up wood, and then threw first into the pot, which was filled with water, the bark of the *Strychnos toxifera.* As soon as the water began to boil the Indian added at certain intervals a handful of the other ingredients, except the muramu root. In doing so he bent his head over the pot, strongly blowing into the mixture, which he said afterward added considerably to the strength of the poison. During the process he only kept as much fire as was necessary for slow boiling, carefully skimming the foam collecting on the extract. Within the next twenty-four hours the old man left the fire only for one moment, keeping the mixture at an equal heat. After the lapse of twenty-four hours the extract became thick, and was reduced by the boiling to about a quart, the color being that of strong coffee. The old cook then took the extract from the fire and poured it into the strainer, the extract trickling slowly into another flat vessel, and left the remainder in the silk-grass. After exposing the strained extract to the sun for about three hours, he added the slimy juice pressed out of the root of the muramu, which had previously been soaked for a short time in the boiling poison, and then had been pressed out. The poison immediately exhibited a remarkable alteration, curdling to a jelly-like substance. After this peculiar process, he poured the poison into earthen vessels, flatter than those before mentioned, for the purpose of bringing the poison to a consistence equal to that of thick treacle by exposing it to the sun. Afterward it was poured into the peculiar small calabashes, or half-round earthen vessels, manufactured only for that purpose, where it ultimately changed to a hard substance. On the third day the poison was ready, when the cook, satisfied with the product, tried the strength of the poison on some lizards in Dr. Schomburgk's presence. He dipped the point of a pin into the poison, let it dry, wounded one of the lizards in one of the toes of the hind foot, and then let it run. In nine minutes the peculiar symptoms of the poison made their appearance, and one minute after the slightly-wounded animal was dead. A rat died in four minutes, and a fowl in three. The Indians declare the poison loses its effect after two years, but its power can be destroyed by pouring some manihot juice upon it. Dr. Schomburgk took some of the urari to Berlin with him, and made several experiments with it, when he found that it frequently took from fifteen to twenty minutes, according to the tenacity of life, before death ensued. A commission of scientific men was appointed by the German Government to report on the effects of the poison, and many experiments were made, from the frog to the horse. Professor Heintz made a careful analysis of the poison, and, though it was made from strychnos, he found it contained no strychnine. From experiments made by Professors Virchow and Münter they conclude: 1. That the urari kept dry will, after the lapse of five years, retain its intense and rapid efficiency. 2. That it has no effects like those of strychnine. 3. That it is not a tetanic poison, but operates by stupefying. 4. That urari causes palsy, produces a discontinuance of the voluntary movements of the muscles, with continued functions of the involuntary muscles of the heart, intestines, etc. 5. That the external application of urari is not fatal, but only when absorbed through a wound. 6.

That death is not the direct result of poisoning, but of the discontinuance of the mechanical action of respiration. Urari, Dr. Schomburgk states, has been successfully used both in tetanus and hydrophobia.—*Times.*

## REDWOOD ON IRON PREPARATIONS.

Papers relating to strictly pharmaceutical subjects must always be limited in number, and on that ground alone they are specially welcome. While the domain of chemistry is inexhaustible, pharmacy has a much narrower sphere, and its operations are of a more restricted character. On Wednesday evening, March 3, Professor Redwood gave in a connected form the results of his investigations, which have extended over many years, on the "Diffusive Properties of some Preparations of Iron." Oxide of iron, as it exists in dialysed iron, is in the colloidal state (Graham), and has a very low diffusive power. Such substances are characterized by the absence of crystallizing property, while those which are highly diffusive belong generally to the class of crystalline bodies. It cannot, however, be inferred that the absence of crystalline property will necessarily be attended with low diffusive power—a fact proved experimentally in 1862, though it is considered generally that the diffusive property of substances in solution bears some relation to the power they possess of assuming a crystalline condition. M. Personne has stated that dialysed iron is incapable of being absorbed during its passage through the intestinal canal, and is therefore inactive; should this be due to the colloidal state of the iron, other iron preparations may owe their activity to their diffusive properties.

The scaled preparations of iron are largely used in medicine in preference to its crystalline salts, on account of the absence of inky taste and strong styptic property. They might be supposed either to be colloidal, or at least deficient in diffusive power, since colloids are marked usually by absence or deficiency of taste.

Experiments were undertaken for the purpose of showing what the relative diffusive power of some of the salts of iron was, and to what extent this was connected, in such salts, with their crystalline or amorphous condition.

"The dialyser used in the experiments consisted of a glass jar, the membrane-covered mouth of which was 5½ inches in diameter; and this rested in the mouth of a white earthen dish. Two thousand grain measures of either a 5 per cent. or a 10 per cent. solution of the salt used was put into the glass jar, and 25 oz. of water into the dish. The diffusate was usually removed at the expiration of two, but sometimes of three, days, at the commencement of an experiment, although a longer time was allowed for each separate diffusion, when the action became sluggish towards the end of an experiment."

Citrate of iron, ferric citrate, was subjected to the action of dialysis, and experiments were conducted in a similar manner with (2) ammonio-citrate of iron; (3) potassio-tartrate of iron, tartarated iron; (4) citrate of iron and quinine; (5) sulphate of iron, ferrous sulphate; (6) per-sulphate of iron, ferric sulphate; (7) chloride of iron, ferrous chloride; (8) perchloride of iron, ferric chloride; and (9) numerous experiments were made with dialysed iron. Broadly stated, the Professor found that the scaled-iron preparations were not at all deficient in diffusive power; in the first instance when submitted to dialysis they diffused rapidly, and in that respect compared favorably with the crystalline salts of iron.

A point was always reached when they ceased to diffuse further. Apparently some change of composition took place in the salt during the process of diffusion.

Ammonio-citrate of iron (containing 30 per cent. of oxide of iron), in its first passage through the septum, contained rather a smaller proportion of oxide of iron than was contained in the salt before starting; afterward, the salt became more and more basic to the end of the process. Increased basicity took place, not only in the diffusate, but in the contents of the dialyser. Citrate of iron, which contained 30 per cent. of oxide, on its passage through the septum would contain commonly about 40 per cent. of oxide; and when the process stopped the contents of the dialyser would show about 60 per cent. When in that degree of basicity the iron was found to be in the colloidal state. The salt outside which had passed through underwent a similar change. With regard to dialysed iron, it was shown that if a few drops were added to common water, the small quantity of saline matter contained decomposed it, and all the oxide of iron it contained was precipitated.

M. Personne stated that iron so precipitated was insoluble in acids, and that was one of the characteristics of colloidal iron. This iron in a state of pseudo-solution would pass through the intestines unabsorbed, and was medicinally inert. Professor Redwood found that this apparently dissolved precipitate, whether held in solution by means of hydrochloric or acetic acid, would pass through a filter, but would not pass through a septum. In two days not a particle of the iron had diffused through the diaphragm.

The subject had evidently very important bearings, particulary with regard to the question of the absorption of colloidal bodies. The results of several experiments were then mentioned in detail, the two last being particularly interesting.

A suggestion having been made that the colloidal iron of dialysed iron, although not diffusible when brought into a state of apparent solution with hydrochloric acid, even when this is much in excess of what is required for such solution, might be taken up by the albumenoids in the stomach and thus rendered assimilable, experiments were made in that direction.

(9, *e.*) A dilute solution of albumen with hydrochloric acid was digested for two hours with dialysed iron at 100° F., and then left in a dialyser for two days, but no iron was found in the diffusate.

(9, *f.*) A peptone was prepared by dissolving 50 grains of coagulated albumen with 2 grains of pepsin in 500 grains of 1 per cent. dilute hydrochloric acid, adding 50 grains of dialysed iron, and digesting them together for two hours at 100° F. This was put into a dialyser for two days, but here again not a trace of iron was found in the diffusate.

In view of these results it can hardly be conceived that dialysed iron should be an active or efficacious medicine. At any rate, it remains for those who advocate its use to suggest a theory by which medicinal activity may be reasonably ascribed to a substance having the properties which this preparation has been proved to possess.

An animated discussion then ensued, in which Mr. Williams, Dr. Symes, Messrs. Postans, Umney and Luff and Professor Attfield took part. The latter wished to ascertain whether the action of medicinal and other substances in passing through the alimentary canal was, so far as regarded the act of nutrition, to be entirely ascribed to dialysis. He thought a great deal more had to be done in the way of experiment before that conclusion could be entirely adopted. Possibly, moreover, seeing that the scaled preparations of iron were capable of being diffused, it might eventually turn out that they were not totally devoid of crystalline character. Professor Redwood concurred with the possibility of this theory. Some years ago glycerin was looked upon as being perfectly uncrystallizable; it had since been demonstrated that that was not the case. Glycerin would diffuse quite as well as cane sugar. He admitted that in the process of dialysis the salt might break up into two or three compounds, and that a salt which was uncrystallizable in the state in which it would be used might, nevertheless, consist of a mixture of salts, some of which were crystallizable. When the discussion was finished, and a vote of thanks proposed to the lecturer, there was a cheer such as is seldom heard at an evening meeting, and which certainly has never been more thoroughly deserved.—*The Chemist and Druggist.*

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## REVIEW OF REINCH'S TEST FOR ARSENIC.

The statements in regard to the behavior of the antimony deposit, however, have been somewhat discordant. Thus, by some writers, it is stated that this metal fails to yield any sublimate whatever; by others, that it yields an amorphous sublimate; and by others still, that the deposit is either amorphous or granular. According to Professor W. A. Miller, however, the antimony deposit, when heated, "gradually becomes oxidized, and at a higher temperature the oxide is volatilized, condensing in needles; not, like arsenic, in octahedra." "Elements of Chemistry," ii., p. 602.

This statement of Professor Miller was strongly urged a few years since in a somewhat noted trial as evidence of the *absence* of antimony, since on the application of the copper test there was a failure to obtain crystalline needles. Immediately after this trial, in 1872, we very carefully examined this test in regard to the character of the sublimate produced by antimony. In over fifty consecutive experiments of this kind, in which copper, pretty heavily coated with antimony, but used in small portions at a time, was employed, we failed to obtain well-defined crystalline needles, except in some three or four instances in which a few needles were observed, and in one in which the sublimate consisted largely of large groups of prismatic needles with single prisms.

But, what is of more importance in a forensic point of view, we found that the sublimate produced from antimony might contain *octa-*

*hedral crystals* of antimonic oxide, and that under certain conditions it was almost sure to contain such crystals. In a number of instances sublimates were obtained, which, when examined under the microscope, presented fields which, taken alone, could not be distinguished from an arsenical sublimate by the most experienced eye.

These octahedral crystals are more likely to form when the heat is applied very gradually, and especially when the reduction tube is relatively large to the quantity of deposit submitted to sublimation. In no instances were octahedral crystals obtained when a very narrow or contracted tube was employed. It would thus appear that, for the production of crystals, antimony required a more free supply of air than arsenic, although the absolute quantity of oxygen required is less.

Although it is thus possible to obtain from antimony sublimates, certain portions of which, under the microscope, are not to be distinguished from the results obtained from arsenic, yet there is considerable difference in the general behavior of these metals under the action of this test.

1. The antimony deposit requires a much higher temperature to volatilize it, vaporizing at little, if any, below a dull red heat; whereas, according to recent investigations, metallic arsenic volatilizes at about 356° F., or, according to Professor Guy, even so low, when in small quantity, as 230° F.

2. The position of the sublimate in the reduction tube, as usually obtained, may serve at once to distinguish the antimonial from the arsenical deposit. In the case of antimony, on account of its less volatility, the lower margin of the sublimate (in which the crystals, when present, are found) is only slightly in advance of the slip of copper, or the sublimate may even form on the sides of the tube surrounding the copper, especially when the heat is restricted to the lower end of the tube; whilst, as is well known, in the case of arsenic the sublimate usually forms half an inch or more in advance of the copper foil.

3. The general appearance of the sublimate under the microscope, even when octahedral crystals are present, usually differs very greatly from that obtained from arsenic, the octahedra being confined to the lower margin of the sublimate, and many more appearing opaque than in the case of that metal, and there being many granular and opaque

points interspersed among the crystals. Moreover, only a single field, or at most a very small portion of the sublimate will present crystals, the other portions being either wholly amorphous or at most granular.

As is well known, the arsenical sublimate, as usually obtained, consists wholly of octahedral crystals, which gradually diminish in size from the lower portion of the sublimate to the upper margin, where, under a low power of the microscope, they may appear as mere points; which, however, under a higher power of the instrument, will be found to be perfect octahedra.

In a large series of experiments, after the manner in which this test is ordinarily applied for the detection of arsenic, we in no instance obtained from antimony a sublimate that could not readily be distinguished from a pure arsenical deposit; yet it must be borne in mind that, under certain conditions, it is possible to obtain from antimony a sublimate consisting largely, if not wholly, of octahedral crystals, and presenting to the naked eye the sparkling appearance usually presented by the arsenical sublimate. In the instance already mentioned, in which large groups of prismatic needles were obtained, very many octahedra were interspersed among the prisms.

From the foregoing statements it is obvious that the mere production of octahedral crystals by this test is not, in itself, conclusive proof of the presence of arsenic. When examining this test in the preparation of the *Micro-Chemistry of Poisons*, we in a few instances observed minute octahedra, which at the time were attributed to the presence of a trace of arsenic in the antimony compound employed. The entire absence of that metal in the present experiments was fully established.

We also find that the deposit of metallic antimony formed in the exit tube of a Marsh apparatus by decomposing antimonuretted hydrogen by heat, may, when the tube is detached and the deposit again heated, be in part at least converted into octahedral crystals of the oxide.

If pure antimonic oxide be vaporized in a small tube, the sublimate usually contains octahedral crystals, but sometimes crystalline needles. According to our experiments, octahedra are much more likely to be present than needles; the opposite result, however, is stated by several writers.

Our experience has confirmed the observation first made by Mitcherlich, that when a solution of tartar emetic is decomposed by excess of ammonia, the precipitated antimonic oxide is after a time converted, in part at least, into minute octahedra.—*Prof. Wormley in Am. Jour. Med. Science.*

# METALLIC MERCURY FOUND IN THE URINE FOLLOWING THE ADMINISTRATION OF THE GREEN IODIDE.*

BY PLYM. S. HAYES, M. D.,

Professor of Chemistry, Woman's Medical College, Chicago.

Mr. B——, a commercial traveler, aged thirty, of German parentage, of full habit and light complexion, placed himself under my care a short time since.

He stated that he was suffering from syphilis, recently acquired, and was then suffering from a severe headache and sore throat. Although he had taken a severe cold just before leaving New York, he was fearful that his present troubles were manifestations of syphilis. His skin was hot and dry, and his pulse 110 per minute. His throat was of a damask hue, but without any patches or ulceration. There was a nearly healed chancre on his prepuce; this had been cauterized by his New York physician. He had had two (now suppurating) buboes, and the syphilides were just appearing on his forehead. He stated that the following prescription was all the medicine he had taken since he had become syphilitic:

℞ Hydrargyri iodidi virid...................... gr. x.
Ext. opii.................................... gr. v.
*M.* et fiat pil. No. 20.
*S.* Take one three times a day.

I advised that he continue the pills, and in addition gave him quinine and a gargle. Two days later he came to my office and I applied a dilute solution of the liq. hydrargyri nitratis to the eruption. In all not more than three drops of the liq. hydrargyri nitratis were used. The next day he returned, with the left side of the face quite swollen. Two days later he sent for me and I found his legs quite œdematous, the pulse and temperature remaining the same as when I first saw him. The urine was small in quantity and high colored. An examination of it revealed the following: The specific gravity was 1,035; albumen was present in such quantity that when coagulated the coagulum formed a cast of the test tube. A microscopical examination revealed a large number of waxy casts with a few oil globules, and a few free blood globules and epithelial cells. The mercury was discontinued and the patient ordered a hot bath, which was to be followed by the fld. ext. jaborandi, fifteen ℳ every half hour until diaphoresis ensued. Two days later another specimen of urine was obtained. The specific gravity of this was 1,021, and there was no albumen. The casts, oil globules and blood globules had disappeared. Five slides were examined under the microscope. In three of the five, globules of mercury were found varying in size from the 1-3,000 to the 1-500 of an inch. Dr. H. M. Bannister examined two of the slides and confirmed the above statement. It did not occur to me to examine the first specimen for mercury. A week later the dropsy had disappeared and the eruption had vanished. Mr. B—— stated that five or six years ago he had been treated with mercury—in what form he was unable to say—for syphilis. The only symptom of syphilis he had at that time was the sore on the penis. At that time the mercury was given until he was salivated, and then discontinued; since which time he has not taken any until the present inoculation. Whether the albumenuria was due to the mercury, to the cold he had taken, or to both, I am unable to say. From the rapid subsidence of the œdema, and the more rapid disappearance of the albumen from the urine after the mercury had been discontinued, I am of the opinion that mercury was the chief factor in the case. The bottle in which the last specimen of urine was obtained was obsolutely clean, having been bought new at the druggist's. The patient urinated directly into the bottle. And finally, the slides and covers used in examining the last four specimens had never been used before. Every precaution was used to exclude errors. I was induced to look for metallic mercury, from Dr. Clevenger's paper on "The Action of Mercury." The important fact in this case is the appearance of metallic mercury in the urine following the ingestion of the green iodide, the patient not having taken mercury for five years before, and then probably as a salt and not in the metallic form.—*Chicago Medical Gazette.*

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* Read before the Chicago Biological Society, April, 1880.

# PRACTICAL SUGGESTIONS.

BY C. F. HALLERMAN.

SYR. FER. IODIDI.—The most expeditious method of preparing this syrup is by substituting powdered iron for iron wire, and rubbing this with the required quantity of iodine and water briskly for a few moments in an iron mortar; when the reaction has ceased filter the solution into the heated syrup. This is the method directed in the French Pharmacopœia, and it certainly has many advantages. As about two grains of iodine (by taking the U. S. P. quantity) are lost by vaporization, which is due to the heat developed during the reaction, so much more should be taken.

SYR. IPECACUANHÆ.—If prepared by the following method an entirely satisfactory syrup, which will not become turbid or throw down a precipitate, but remain permanently bright and transparent, is the result:

| | | |
|---|---|---|
| ℞ | Rad. ipecac. gr. pulv | ℥ i. |
| | Alcohol | ℥ iss. |
| | Vin. malagæ | ℥ i. |
| | Aquæ frigidæ | ℥ xi. |
| | Sacchar. alb | ℥ xvi. |

Digest the ipecac. with the menstruum for ten days; express, filter, and into the filtered liquid, which should measure twelve ounces, dissolve the sugar with the aid of a gentle heat; then strain.

TINCT. COLCHICI.—If this is made according to our official formula, the powdered colchicum seed is certainly not exhausted of its active constituents. A far better method, I think, is to take the whole seed and digest it for three weeks in the menstruum. There is no necessity whatever to powder the seed, as all the active principles are contained in the outer husk only; the inner of the seed is nothing but a hard, woody kernel. I prepared one tincture according to the Pharmacopœia, and another as suggested above, and not having time to submit them to a chemical analysis, I tried a simpler experiment to test their relative virtues, which consisted in swallowing small quantities of the residue left by each tincture and noticing its effect upon the system. I first took fifteen grains of the seed, exhausted according to

U. S. P., and felt very marked and decided symptoms, viz., burning thirst, increase of urine, pain in abdomen and headache; after three days, when these symptoms had entirely left me, I again took fifteen grains of the seeds, exhausted as described above, which, before swallowing, I first powdered. The only symptoms I noticed were, increase of urine and slight thirst. The tincture thus prepared by maceration also has a darker color than the other. The wine should be made in the same manner.

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## ARTIFICIAL DIAMONDS AT LAST.

Professor Story Maskelyne, who examined Mr. James MacTear's presumed "diamonds," an account of which was published on page 88, present volume, has written the following letter to the London *Times* on those produced by Mr. Hannay:

"Sir: A few weeks since I had to proclaim the failure of one attempt to produce the diamond in a chemical laboratory. To-day I ask a little space in one of your columns in order to announce the entire success of such an attempt by another Glasgow gentleman.

"That gentleman is Mr. J. Ballantine Hannay, of Woodbourne, Helensburg, and Sword Street, Glasgow, a Fellow of the Chemical Society of London, who has to-day sent me some small crystallized particles presenting exactly the appearance of fragments of a broken diamond.

"In luster, in a certain lamellar structure on the surfaces of cleavage, in refractive power, they accorded so closely with that mineral that it seemed hardly rash to proclaim them even at first sight to be diamond. And they satisfy the characteristic tests of that substance. Like the diamond, they are nearly inert in polarized light, and their hardness is such that they easily scored deep grooves in a polished surface of sapphire, which the diamond alone can do. I was able to measure the angle between the cleavage faces of one of them, notwithstanding that the image from one face was too incomplete for a very accurate result. But the mean of the angles so measured on the goniometer was 70° 29′, the correct angle on a crystal of the diamond being 70° 31·7′. Finally, one of the particles ignited on a foil of platinum, glowed and gradually disappeared exactly as mineral diamond would do. There is no doubt whatever that Mr. Hannay has succeeded in solving this problem, and removing from the science of chemistry an opprobrium so long adhering to it; for, whereas the larger part of the great volume recording the triumphs of that science is occupied by the chemistry of carbon, this element has never been crystallized by man till Mr. Hannay achieved the triumph which I have the pleasure of recording to-day. His process for effecting this transmutation, hardly less momentuous to the arts than to the possessors of a wealth of jewelry, is on the eve of being announced to the Royal Society.

"I am, sir, your obedient servant,

"N. Story Maskelyne.

"Mineral Department, British Museum, Feb. 19."

—*Scientific American.*

## GOLD LACQUER FOR BRASS.

This is applied upon the metallic surface, previously scoured and perfectly clean, and at once heated with an alcohol flame, so as to melt the ingredients of the lacquer. A good recipe for such lacquer is the following:

Shellac 200, sandarac 80, mastic 80, gamboge 20, dragon's blood 20, annatto 20, Venice turpentine 60, red saunders 80, alcohol 1000 parts. Digest and filter.

Another formula: Shellac 10, mastic 1, sandarac 1, powdered aloes 2, powdered turmeric 5, powdered saffron ½, dragon's blood 1, Venice turpentine ½, alcohol 100 parts. Digest and filter. The articles to be lacquered are freed from dirt and deprived of grease, if necessary, by means of ether, then dried and heated to 30–35° C. (= 86° to 95° F.), quickly varnished over with a fine brush, and once more exposed to a somewhat higher temperature. The lacquer must not be applied too thick.

Another: Sandarac 12, mastic 6, copaiva 2, Venice turpentine 3, oil of turpentine 4, absolute alcohol 36 parts. Mix this varnish with an equal weight of a filtered solution of shellac 5, dragon's blood 5, alcohol 50 parts.

Another: Shellac 2, sandarac 4, elemi 4, alcohol 40 parts. Dissolve and filter. Mix the filtrate with an alcoholic tincture of gamboge and dragon's blood (or an alcoholic solution of fuchsine, picric acid, etc.), until the desired shade of color is obtained.—*Pharm. Zeit.*

# ETHYL BROMIDE.*

Dr. Laurence Turnbull, in the lecture delivered as above, says of the new anæsthetic:

Hydrobromic ether possesses the following properties:

1. That hydrobromic ether is an anæsthetic which, with care, may be safely administered to man and animals.

2. That hydrobromic ether is more rapid in producing anæsthesia than even chloroform, and is eliminated by respiration and the kidneys more rapidly than any other of this class of agents.

3. That the heart and respiration are but very slightly affected, unless employed in excessive quantities.

4. Vomiting is more rare than with ether or chloroform.

5. That owing to its odor being more rapidly removed, it can be used with comfort in a private office or the patient's chamber; and as a rule the odor is more agreeable than that of ordinary ether.

6. Hydrobromic ether not being inflammable, and producing its anæsthetic influence on the muscles of the throat, any operation can be performed on the mouth and throat with satisfaction to the surgeon and comfort to the patient.

7. In vivisections it acts more promptly than ether upon animals, requiring, as a rule, only two minutes to bring a dog under its influence, and is not fatal, like chloroform.

How often was there nausea or vomiting during the use of hydrobromic ether? In one hundred cases there were twelve cases of slight nausea after the operation, and eight cases of vomiting during the operation; but always where the patient had partaken freely of food of a solid character just prior to the use of the anæsthetic.

ASPHYXIA.—This disagreeable and painful symptom was not noticed in any of the cases.

FAINTING.—In no instance was there any evidence of fainting.

HYSTERICAL EXCITEMENT.—This was noticed in some six cases, but soon passed away, leaving no bad symptoms.

PROSTRATION.—In four cases was there some prostration, evinced by cold moisture on the hands and face, but of very short duration.

THE RAPIDITY WITH WHICH THE PATIENTS CAME UNDER THE ANÆSTHETIC INFLUENCE OF HYDROBROMIC ETHER.—Ten cases in one minute and a half; twenty in two minutes; ten in two minutes and a half; forty in three minutes; ten in four minutes; ten in five minutes.

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* Abstract of a lecture by Laurence Turnbull, M.D.

How long did it take to recover consciousness from the effects of the hydrobromic ether?

In fifty cases, two minutes and a half; in thirty cases, three minutes; and in twenty cases, four and a half to five minutes. Struggling, coughing or gagging, which occurs so frequently during etherization, was very rare under the anæsthetic influence of hydrobromic ether. This form of anæsthetic is not apt to produce headache. No giddiness attends the use of hydrobromic ether.

### METHOD OF USING IT.

The hydrobromic ether is best given in a folded starched napkin, so as to cover the face, and outside that a soft pocket handkerchief or second napkin. Twice I have found that unless the first drachm was crowded upon the patient, it is apt not to act promptly. This has been a cause of failure in two or three instances, in the hands of able surgeons.—*The Medical and Surgical Reporter.*

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## THE BROMIDE OF ETHYL,

Or hydrobromic ether, was introduced into practice by Dr. Turnbull, of Philadelphia, and has been extensively used both by him and by Dr. Levis, as an anæsthetic. These observers say that it is perfectly safe, that it is rapid in its effects, produces less gastric disturbance than either ether or chloroform, and is cheap.

We had the pleasure of witnessing its administration at the clinic of Professor C. Johnston, February 7th, and the following is the record:

| | |
|---|---|
| Time required to produce anæsthesia, | 1 minute, 42 seconds. |
| Duration of anæsthesia.................. | 3 " 45 " |
| Amount used.................................. | ʒj |
| Respiration.................................... | 49 |
| Pulse.............................................. | 88 |

Both remained unchanged. The patient, a colored man, had symptoms of cystitis, and the operation was the simple introduction of a sound into the bladder. There was a momentary struggle and attempt to thrust the inhaler away at first. Recovery of consciousness seemed to be instantaneous, and the patient got up at once, but felt a little giddy, and was made to lie down again for a few moments, when he got up and "felt all right." He said that he had no pain, nor any other sense of consciousness.

This is the first instance, so far as we know, of the use of the agent in this city. The impression produced was a most favorable one, and should it continue to produce such satisfactory effects it cannot fail to supplant in a very short time both ether and chloroform.—*Maryland Medical Journal.*

## SIR HUMPHREY DAVY'S ZEAL.

"The same moral and physical courage which Davy displayed in his youth by deliberately taking out his pocket knife and excising a part of his leg which had been bitten by a mad dog, and cauterizing the wound with his own hands, was exhibited in his chemical investigations. His discovery that nitrous gas, the vapor of aquafortis, is not injurious to health, resulted from experiments on his own life. He obtained the gas in a state of purity, and though very well aware of the danger he ran if the received theory of its deadly powers was true, which he doubted, he resolved to inhale it in its pure form. Gradually increasing the dose, he ultimately succeeded in breathing four quarts of the gas from and into a silk bag. He experienced a sense of giddiness, accompanied with loss of sensation and volition, a state analogous to intoxication, 'attended,' as he says, 'by a highly pleasurable thrilling in the chest and limbs. The objects around became dazzling and my hearing more acute. Towards the last inspiration the sense of muscular power became greater, and at last an irresistible propensity to action was indulged in. My gesticulations were various and violent. In ten minutes I had recovered my natural state of mind.'

"And what are we to say of the daring of the following experiment, at which he was again operator and subject? He was curious to know what effect drink would have on a person under the influence of this gas. He drank a bottle of wine in about eight minutes. 'I perceived,' says he, 'a sense of fullness in the head and throbbing of the arteries. I lost the power of speech, and was unable to stand steadily. In an hour I sank into a state of insensibility, in which I remained for two hours and a half. I was awakened by severe headache and nausea, and my bodily and mental debility were excessive. In this state I breathed five quarts of gas for a minute and a half, but it must have been impure, for it had no effect.' He then respired twelve quarts of oxygen for nearly four minutes, without any material change in his sensations. The severe headache continuing, he respired seven quarts of quite pure nitrous oxide for two and a half minutes. After the third respiration the headache vanished. Brilliant ideas passed through his mind. He jumped and danced across the room; but languor and depression succeeded, which gradually wore off towards evening. In his treatise 'Concerning Nitrous Oxide' he records its amusing effects on several of his friends. One of them danced about like a spinning top, and got so pugnacious that he struck at whoever happened to be near him. Its influence on such chosen souls as Coleridge and Southey was by no means brilliant. They jumped and skipped about the room, laughing idiotically, every gleam of intelligence fading from their faces.

"The experiment on himself by which Davy proved that hydrocarbonate [carburetted hydrogen] acts as a sedative was fearfully daring. It was no foolhardy bravado that was the motive power with him, but a love of scientific investigation. He says he was anxious to compare its effects with those of nitrous oxide. Emboldened by a first experiment, from which he felt no excessively painful results, he introduced four quarts of the gas into a silk bag. After a forced exhaustion of the lungs, and the nose being accurately closed, he made three breathings of the hydrocarbonate. The first produced a feeling of numbness, the second took away the power of vision and enfeebled the other senses; the third sent him away in a swoon, and just left him power to throw away the tube from his lips. After a short interval he recovered a little, and was able to whisper, 'I do not think I shall die.' Placing his finger on his wrist, he found his pulse beating with excessive quickness. In about a minute he was able to walk, but for an hour was weak and giddy, and conscious of a painful pressure upon the chest.—*Temple Bar.*

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ACCORDING to Professor Arena the tænicidal principle of kooso is not *koosin*, but a green resin, soluble in alcohol and ether. Its efficacy is impaired, if not altogether destroyed, by prolonged exposure to the air.

## NOTES AND ABSTRACTS FROM VARIOUS SOURCES.

To Clean and Bleach Sponges.—The first step is to thoroughly free the sponge from sand, by shaking or beating. Rinse well in hot water, and squeeze as dry as possible. Then immerse them for some time in very dilute hydrochloric acid, to remove the calcareous matter, and again wash in hot or cold water till all the acid has been removed. At this point in the process they will be thoroughly clean. Three plans are adopted for bleaching sponges thus prepared. They may be immersed for twenty-four hours in weak chlorine water, or in weak hydrochloric acid, containing 6 per cent. of hyposulphite of soda, finishing by washing with abundance of fresh water and drying. The third project was suggested by a writer in the *Oesterriches Zeitschrift fur Pharmacie*, who objected to the use of chlorine and sulphurous acid, as injurious to the operator and his surroundings. The sponges should be steeped for five or ten minutes in a 2 per cent. solution of permanganate of potassium or sodium (about the strength of Condy's fluid). Manganese oxide is deposited on the sponges, giving them a deep brown tint. This is removed by soaking them for a minute or two in a 2 per cent. solution of oxalic acid. The sponge rapidly whitens, and must be well washed with fresh water. A beautifully bleached sponge may be obtained without any injury to its texture by substituting very dilute sulphuric for the oxalic acid, and repeatedly squeezing out.—*Chemist and Druggist.*

Luminous Paint.—We believe that more than one patent has been taken out within recent years with this object, and the Bologna stone and such like discoveries of 200 and 300 years ago (described in Beckmann's "History of Inventions") were more or less similar in composition to the preparation which is now being put prominently before the public under the title of "Luminous Paint," or, as some of its admirers with a poetic turn of mind have described it, "Captive Daylight." This is claimed to be the original patent, and probably is so in regard to its use as a paint. It is the discovery of Mr. W. H. Balmain, formerly of University College, and latterly of the Greenbank Chemical Works, Lancashire. The basis of the paint is, as we understand, calcined oyster shells combined with sulphur. By laying it onto glass, metal, or other materials, the surface becomes capable of absorbing light from any source, and distributing it in the dark during some hours. A severe illness compelled Mr. Balmain to leave his invention unworked until lately, when it was put into the hands of Messrs. Ihlee & Horne, of Aldermanbury, who adapted it to several purposes, and were ready to bring it forward commercially, when Mr. Balmain's death a few weeks ago made it necessary to offer the patent for sale, and the result is that a company will probably be formed to develop the business of it. Experiments shown to us a few days ago were very interesting. In a perfectly dark room lanterns painted with the composition gave out sufficient light to read by. Plaster casts had a spiritualized appearance. House numbers, room decorations and advertising disks had a very attractive effect, and life-buoys thus rendered phosphorescent were suggestive of most valuable usefulness. The theory involved was strikingly illustrated by a round metallic plate, which had been painted with the compound and was exhausted of its light. White paper letters were stuck on its face. At first, of course, this could not be seen at all. Exposure, however, to the flame of a lucifer for a few seconds made it visible, while an equally brief submission of it to incandescent magnesium made it brilliant with the letters standing out in black relief. Of course, many purposes for which the paint may be employed suggest themselves, such as painting rooms, railway carriages, clock-dials, ships, lighthouses; and there is no reason, we imagine, why its adoption should involve any specially great expense.—*Chemist and Druggist.*

OLEATE OF MERCURY.—The following, taken from our files, produces an ointment containing ten per cent. of the mercuric oxide in combination:

| | |
|---|---|
| Red mercuric oxide…………………… | 1 troy ounce. |
| Nitric acid…………………………………… | 6 fluid drachms. |
| Liquor sodæ (U. S. P.)………………… | 6 " ounces. |
| Oleic acid…………………………………… | 2½ troy " |
| Cosmoline……………………………………… | |
| Water, of each, sufficient……………… | |

Dissolve the mercuric oxide in the nitric acid, dilute the solution with a pint of distilled water, and filter it into a tared dish containing the solution of soda, stirring constantly. Allow the precipitated oxide to subside, and thoroughly wash it by repeated decantations. Place the dish containing the moist precipitate on a water bath, apply heat, and add gradually the oleic acid, stirring constantly, until the combination is effected. Then remove carefully by decantation and evaporation all traces of moisture, and add to the resulting oleate a sufficient quantity of cosmoline (or vaseline) to make the completed product weigh ten troy ounces. According to Mr. W. S. Thompson, who originated the above modified process, the ointment thus obtained keeps unaltered for a long while, and is less expensive to make than by the method used formerly.—*Druggists Circular and Chemical Gazette.*

STARCH GLOSS.—According to Dr. Eduard Freise, the following will make an excellent preparation:

| | | |
|---|---|---|
| Sodium borate | 85 | parts. |
| Sodium chloride | 10 | " |
| Gum Arabic, fine white pow'd | 75 | " |
| Stearine, pow'd | 275 | " |

to be mixed intimately with

| | | |
|---|---|---|
| Starch | 435 | " |

The only difficulty is the powdering of the stearine. But this may be accomplished by first grating it as fine as possible, then sprinkling over it a little benzine, in a mortar, and briskly triturating.

COLD CREAM WITHOUT FAT.—

| | | |
|---|---|---|
| Mucilage of quince | 40 | parts. |
| Almond soap | 1 | part. |
| Stearic acid | 10 | parts. |
| Glycerin | 2 | " |

Mix. This cosmetic is white, of the proper consistence, unctuous, and has the advantage of not turning rancid.

CHEMICAL REPULSION.—In a paper read on the 18th of January, before the Royal Society, Dr. E. J. Mills claimed to have discovered a new order of chemical phenomena, which he has provisionally designated as "chemical repulsion." If a thin layer of a solution of chloride of barium be distributed evenly between two plates of glass placed horizontally (excess being removed by pressing the plates together), and then dilute sulphuric acid be brought into contact with it through a perforation made in the upper plate, precipitation takes place and continues progressively and uniformly from the perforation as a center;

forming an increasing circle, for instance, if the perforation be circular. If the sulphuric acid be introduced through two perforations in the upper plate two circles are formed, but as their circumferences approach each other development is retarded between the perforations, the figure of advance being no longer circular, but oval, and, however long the experiment may be continued, there always remains a line of demarkation of "no chemical action" between the two figures. When there are perforations at the four points of a square and one in the center, the center circle, having, as it develops, no way of escape from the surrounding four, eventually forms a square figure bounded by repulsion lines. Dr. Mills considers that the phenomena observed afford proof of two propositions: (1) That chemical action can take place at a distance; and (2) that two or more chemical actions, identical except in position, completely exclude one another.—*Scientific American.*

CHAULMOOGRA OIL.—According to the *Berliner Pharmaceutische Zeitung*, of Dec. 24th, 1879, John Moss has analyzed chaulmoogra oil with the following results: He found it to consist of a mixture of fatty acids and glycerins of fatty acids. The principal portion consists of palmitin and palmitic acid, amounting to sixty-three per cent., besides eleven and seven-tenths per cent. of a peculiar fatty acid, which has been called gynocardic acid, and to which the acrid taste of the oil seems to be due. The composition of this acid is very probably $C_{14} H_{24} O_2$, belonging to the series $C_n H_{2n-4} O_2$. There were also present in this oil four per cent. of hypogæic acid and two and one-half per cent. of an acid found in cocoanut oil, and which has been named by its discoverer, St. Evre, cocinic acid. Unquestionably the effects of chaulmoogra oil on the skin are to be ascribed to the gynocardic acid. —*Therapeutic Gazette.*

WOMAN AS THE COMING PHARMACIST.—My sympathy with every effort to extend the opportunity of women to make a comfortable livelihood does not prevent surprise at the direction of much of the modern movements towards this end. The legal and the medical professions, among the most wearing of all callings, are everywhere invaded; but pharmacy is left entirely to men, and clerical labor almost as much so. The duties of a druggist are exactly such as trained women would meet men in as their equals, or even as their superiors. The power of pleasing, combined with deftness and accuracy of manipulation, and with the ability to be physically content with a sedentary life, are the qualities required by the drug clerk. Surely, these qualities abound more in the weaker than in the stronger sex. The total neglect of such a field and the preference for the tumult of the forum or the toil and exposure of medical practice seems remarkable.—*Dr. H. C. Wood's "Brain Work and Overwork."*

HAGER'S method for preparing solution of benzoate of soda consists in rubbing together 15 parts of benzoic acid, and 10½ of sodium bicarbonate; dissolving the mixture, gradually, in 70 parts of boiling water, and rendering it neutral by the careful addition of a little of the required constituent. When the solution has cooled, sufficient water is added to make the whole weigh exactly 100 parts. Five parts of this solution represent one part of crystallized benzoate of soda.—*Canadian Pharm. Jour.*

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## CHICAGO COLLEGE OF PHARMACY.

### ANNUAL MEETING AND ELECTION OF OFFICERS.

At the annual meeting of the Chicago College of Pharmacy, Tuesday, April 6th, reports of officers and committees were presented, and the following officers were elected for the ensuing year: *President*—S. L. Coffin. *First Vice-President*—Henry Biroth. *Second Vice-President*—Judson S. Jacobus. *Secretary*—George H. Ackerman. *Treasurer*—Theo. H. Patterson. *Corresponding Secretary*—James L. Ferguson. *Trustees*—E. H. Sargent, George Buck, Thos. Whitfield, N. Gray Bartlett, J. H. Wilson, Fred. H. Secord, Robt. H. Cowdrey, Adolf G. Vogeler, Geo. M. Hambright, Charles F. Hartwig.

An appropriation of $100 was made for binding pharmaceutical journals now in the library and for the purchase of new books.

The address of the retiring President, Prof. C. Gilbert Wheeler, containing recommendations in regard to pharmacal meetings, the organization of a State Pharmaceutical Association, the extending of an invitation to the American Pharmaceutical Association to hold its meeting in Chicago in 1881, and other matters of interest, was referred to the following committee: S. L. Coffin, Thos. Whitfield, R. H. Cowdrey.

On motion, it was resolved that this College seconds the Wholesale Druggists' Association in its endeavor to secure the repeal of the special tax law.

The reports of the officers show the past year to have been an unusually successful one for the College, in every way.

S. L. Coffin, *Secretary.*

## CINCINNATI COLLEGE OF PHARMACY.

*To the Editor of* The Pharmacist:

Dear Sir: The commencement exercises closing the ninth session of our College were held Tuesday, March 16, when the following seventeen out of twenty-seven applicants received the degree of Graduate in Pharmacy:

| NAME. | THESIS. | RESIDENCE. |
|---|---|---|
| Julius Eichberg | Hard and Soft Water | Petersburg, Va. |
| John Fabing | Analysis of Concheleqυæ, or Quinine Plant, | Cincinnati, O. |
| Francis Grieme | Alstonia Constricta | Cincinnati, O. |
| Robert Groenland | Comm. Carb. Soda | Cincinnati, O. |
| G. H. Hans | Hydrastis Canadensis | Cincinnati, O. |
| Arthur Heinemann | An examination of the root of Helleborus Fœtidus, | Cincinnati, O. |
| E. F. Hallenbeck | The Mexican Vine | Cincinnati, O. |
| Jno. W. Honaker | Collinsonia Canad | Owensville, Ky. |
| Jacob W. Jones | Emulsions | Cincinnati, O. |
| Charles R. Judge | Dialysed Iron | Cincinnati, O. |
| F. E. Klein | Ailanthus Gland | Cincinnati, O. |
| J. M. Long | Soaps of Pharmacy | Cincinnati, O. |
| Chas. C. Reakirt, Jr. | Suppositories of the U. S. P. | Cincinnati, O. |
| Henry I. Schulte | Cascara Sagrada | Cincinnati, O. |
| Edward Speidel | Ferro-phosph. Elix. Calisaya B | Cincinnati, O. |
| H. G. Westphal | Benzoate Sodium | Germany. |
| Otto S. Wensthoff | Robinia Pseudacaciæ | Dayton, O. |

The exercises were opened with prayer by Rev. Z. M. Humphreys, followed by the conferring of degrees by the President, an address on behalf of the Faculty by Prof. E. S. Wayne, an address on behalf of the Board of Trustees by Thad. Reamy, M.D., the distribution of prizes by the Professors and President of the Alumni Association, and music by Prof. Seidensticker's orchestra. The successful contestants for the prizes were: Prof. Judge's, Chemistry—Julius Eichberg; Prof. Wayne's, Materia Medica and Botany—Otto S. Wensthoff; Prof. Fennel's, Pharmacy—Chas. R. Judge. The Alumni prize for the best general examination was awarded to Julius Eichberg. The prizes consisted of gold medals. Respectfully,

LOUIS HEISTER,
CINCINNATI, O., March 18, 1880. *Corresponding Secretary.*

## CHICAGO MEDICAL SOCIETY.

### REPORT OF SPECIAL COMMITTEE ON VARIOUS TOPICS, ADOPTED MARCH 22.

*Resolved*, That this Society holds that the trustees or managing officers of dispensaries owe it to themselves and the profession at large to adopt such means as shall most effectually prevent the wholesale abuse of medical charities.

*Resolved*, That when druggists exceed their proper function as dispensers and chemists, and act in the capacity of prescribers, they usurp a position to which they are not entitled either by experience, knowledge or license, and that this Society denounces all such as unworthy of the confidence of the public or the business recommendation of the profession, and advises that its members sedulously avoid any relations with them.

*Resolved*, That this Society holds that a physician's prescription does not become public property after passing out of his hands, and should never be either repeated for the same patient or duplicated for another, except by the usual authority of the prescriber.

*Resolved*, We see no justice in treating the clergymen or their families gratuitously, unless they should become objects of charity.

*Resolved*, That the expenses of attending the sick poor, especially at their houses, ought to be borne as all other public expenses are; that physicians should be selected for this work without reference to personal feeling, but simply on the score of ability and character, and that they should be paid, from the public treasury, a sum sufficient to secure adequate and proper service.

# EDITORIAL.

## THE FAMILIAR OLD SCARECROW.

At a late meeting of the Chicago Medical Society the evil practices of druggists were fully ventilated, prefatory to a movement in favor of "dispensing our own medicines," which some of the Esculapians there assembled propose to do, unless druggists repent and reform.

To us such movements and threats appear extremely ridiculous, however solemnly and earnestly they may be made. The time was when physicians did dispense their own medicines. Why did they cease to do so, and turn over that part of medical art to a class of men not half as competent, and certainly not more honest than are the pharmacists of to-day? The same reasons which then caused this division of labor exist in much greater force to-day. We have but to fancy the scheme in practice to see its absurdity. In the first place, about eight hundred new pharmacies in offices or stores must be opened, in this city, which, with those in existence, say three hundred, will certainly make business lively in certain lines, temporarily.

Again, just imagine one of our old doctors, say a professor, engaged in the new business. Having concluded that a case requires a few ounces of a compound decoction, he rushes into his laboratory, digs out his gas or kerosene stove, hunts up the ingredients, leaving out such as he cannot find and substituting such stuff as he sees and thinks will do as well. Finally, the mixture is set over the stove to digest. While waiting he washes his hands, brushes his clothes and rushes back into his consulting room, and there finds the wealthy but penurious Mrs. Martyr, who must tell him the history of her sickness during the past seventeen years. He is all attention, but inwardly is timing the boiling of the decoction, until her story gets down to the year 70, when she inadvertently gives his competitor, whom he thoroughly hates, a blizzard, in the way of exposing his malpractice in her case. Now all thought of the decoction has vanished, and the benign old doctor simply listens and says, "yes, yes, no doubt," while the old lady, having now got warmed up, runs "rippety sizzle" through her story to the end, which she reaches in just one hour and ten minutes from the beginning. In the moment of calm following the storm the good doctor remembers his decoction, and rushes unceremoniously into his laboratory, which he finds filled with acrid smoke, the decoction having evaporated to dryness and the extract burned up, while his new tin digester has become unsoldered and ruined. He turns off the gas, mentally anathematizes Galen and all his slops, rushes back into his consulting room, and begs Mrs. M. to excuse him just one moment, and then dashes a little sweet spirits of niter into some half-made vinegar of squills, throws in some carbonate of iron, because the case needs a chalybeate, and this one is cheap and good, puts his thumb on the mouth of the bottle, and gives it a shake *secundem artem*, when, horror of horrors, the liberated carbonic acid from the iron causes the infernal thing to squirt, one of the murky streams going straight for the doctor's right eye, another for his immaculate shirt bosom. Having wiped his weeping eye and buttoned his coat up to his throat to hide that bosom, of which but a moment before he was so proud, he rushes into his reception room to find the man for whom he started to make the decoction, and to whom he now proposes to give the chalybeate mixture as a substitute. But the game has flown, muttering as he slammed the door behind him, so the office boy said: "Helen Blazes can't wait forever." With a sigh the doctor returns to his laboratory, places the mixture among a dozen others without labels, and then re-enters his consultation room. Mrs. Martyr informs him that she has tried everything under the sun, and that she is so set against doctors' stuff, that suppositories are the only things she can endure, and that, indeed, they are the only things which ever did her "a mite of good."

Acting on this cue, the doctor says: "Very well. The medicament which I had decided upon for your case can be exhibited as eligibly in that form as *per orem*. Please excuse me for a few moments while I prepare them, for you must know, my dear madam, that, in consequence of the gross depravity of all the druggists, I have determined to personally dispense all my prescriptions." Then nimbly skipping into the laboratory, the doctor's heart sinks as he looks at the wreck of the stove and digester, for a moment, but thinking that he can make it work well enough to make the suppositories at least, he begins to look for the cocoa butter. Package after package is opened, but no butter is to be found. Well, why will not tallow softened with sweet oil do as well? Here both articles are at hand. He tries, but gets in too much oil, and the mass will never congeal; meanwhile Mrs. M. has tapped at the door, to say that, as it is just time for her to go to attend a meeting of the lady managers of the "Homœopathic Free Dispensary," she will, while there, get a bottle of belladonna pills, and call again some day when he is not so busy. "Very well," says the doctor, half glad that he has got out of the suppository scrape, but still mortified that his efforts have not been more successful. On calling in the office boy he finds that three gentlemen and two ladies have called, waited awhile in the reception room, and then left.

Looking now at his slate, he finds one call near Lincoln park and another at Oakwood boulevard, both in haste. Having pushed his medicine case and all the small bottles of specimens of elixirs, pepsin, pancreatin, ingluvin, lacto-peptin, emulsionized cod liver oil, etc., into his capacious pockets, so as to be ready for any emergency, he hurries to the patient near the park and finds a clear case of rhus poisoning. A pleasurable emotion lights up his countenance as he reflects that grindelia squarrosa is a perfect antidote to that poison, and that it is sure to be among the specimens, as it is one of the new remedies. One after another he reviews his entire legion of specimens, but, alas! the villainous agent left no grindelia. There is, however, a tiny bottle of cascara sagrada, a California novelty, and perhaps useful in this case. To make sure, he will add a little alkali to neutralize the toxicodendric acid, and therefore looks his case through for alkaline compounds, but finds none. He will add a little sub-nitrate of bismuth, which is at least theoretically alkaline, and if not practically so he cannot help it. It is the best thing he has; and who could do more under the circumstances than give it? Hurrying now to his South Side case, he drives by a wholesale drug store and purchases a pound each of bicarbonate of potassium and of fluid extract of grindelia squarrosa, which he crowds into his already plethoric pockets, determined not to be without ammunition in the next skirmish. Arrived at the patient's bed-side, he finds the case to be scarlatina, for which he has read sulpho-carbolate of sodium is almost a specific; but of course he has none, and can't trust the rascally druggist near by to fill his prescription. A happy thought strikes him: potassium and sodium salts are very similar, and besides it must be the carbolic acid which does the work, anyway. Why will it not do to add a little carbolic acid to a solution of his bicarbonate of potassium? The good lady of the house having brought a goblet, he *guesses* off about thirty grains of the bicarbonate and adds, as he thinks, *about* four ounces of water, and then digs out a little carbolic acid with his knife and adds it. The stuff is contrary about mixing, and in the first dose a little globule of the acid steals into the child's mouth, makes it strangle, fight and scream, and finally causes a white film to appear in its fauces.

The mother, sympathizing with her child and indignant at what she conceives to be its unnecessary torture, says: "How much is your fee, doctor?" "Oh, never mind that now," replies the doctor. "It will be necessary to make several more visits in this case." "You must excuse me, doctor," replies the lady, "but I think we will call in Dr. Sweetwater, the Homœopath, whose medicines, if not so good, are so much more pleasant. No doubt your medicines are the best for strong persons, but I think they are too strong for children. Good day, sir." While going back leisurely to his office the old doctor thus soliloquizes: "This has been a sorry day for business. What fools the people are. Really, the world is both a mad-house and a hospital. After all, perhaps I had better relegate this drug business to men who make it a specialty, for one can't carry a whole drug store around in his pockets; besides, it is such nasty work when one is not prepared for it. As I don't make my own clothes, mend my buggy, or shoe my horse, perhaps I may as well apply the same principle of division of labor in this case, and give the pharmacist a chance to make a few dollars as well as myself. Besides, if we all turn into druggists, these fellows will certainly soon become doctors, and such a pressure of competition would surely be a greater evil than that we now suffer."

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EDISON'S recent discoveries are a new medical compound (anæsthetic), new mode of extracting gold from tailings of ore, previously worked by ordinary processes, and finally a flying ship to go at the rate of two hundred miles per hour, or about 5,000 miles per day.

## REV. JOSEPH COOK CONVERTED.

Most of our readers are probably acquainted with the character of this great champion of old-style orthodoxy *verses* modern scientists, particularly geologists and biologists of the Huxley and Haeckel type. Lately he has been experimenting with a "psychic," or medium, and has become a convert to the belief that matter can be moved by spirits or the will of the medium, or some unknown, supra-human force. He regards this point as demonstrated beyond doubt. The question is of extreme importance to all classes, and not less so to pharmacists and physicians than to theologians.

If a spirit or psychic force, acting in obedience to the will of human intelligence, can propel a slate pencil between two slates, why can it not be used to couch a cataract or remove an embolism, or pick out the molecules of arsenic in commercial sub-nitrate of bismuth? Indeed, why can we not delegate most of our physical labor to the ghosts?

But, as for ourselves, we have long been of the opinion that the eloquent Joseph is neither capable of collecting nor estimating scientific evidence. Whenever those endowed with psychic force can move a body in a sealed glass tube, or even in a well corked bottle, except by the aid of heat, magnetism or Franklinic electricity, we shall think it time to investigate their greater claims. To those who claim a knowledge of the past we say, tell us where Charley Ross is, and thus secure the reward; and to those professing ability to divine the future, tell us who will be nominated for President; and instead of those contemptible fees, "25 cents to ladies, gents 50 cents," barrels of coin shall be yours. If you cannot do any of these things, while pretending to do much greater ones, please excuse us for regarding all your claims as fraudulent.

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TERRALINE.—We have received a sample of *Terraline* from Mr. C. T. L. Plautz, the manufacturer, for examination, and on inspection find the same to be an ointment obtained from crude petroleum by fractional distillation and subsequent purification. It has an amber color and is almost free from odor or taste. Products of similar description have been introduced and used to considerable extent in pharmacy in place of animal fats; but as most articles of this nature have been patented and put in the market at fancy prices, the use of Terraline ought to be encouraged on account of its reasonable price.

## THE ERA OF PADS.

We refer not to the foot-pads, who are indeed plentiful enough, but to those little specimens of medical upholstery now hawked about for almost every ill that flesh is heir to. Medical philosophers who were wont to hold up the temporary success of the Perkins' tractors as an example of the superstition once prevalent among the people, and to congratulate themselves on the intellectual superiority of this age, stand in amazement as spectators of a repetition of the folly of faith. Already we have "liver pads," "lung pads," "kidney pads," "headache pads," and of course will soon have "heart pads," "stomach pads," "womb pads," "worm pads," etc. Ere long we may expect enterprising firms to advertise as complete a line of pads as they now do of elixirs or sugar-coated pills. The padites or paddies appear to believe that remedies permeate the body, as do bullets, in a direct line, regardless of teguments, tissues or circulating fluids.

Co-operative Drug Stores.—The editors of the *Louisville Medical News*, referring to a proposition in the *Western Lancet* that physicians should unite in the establishment of co-operative drug stores, thinks it doubtful whether ten or a dozen physicians would agree sufficiently well to run a drug store successfully. We think there is not much room for *doubt* on *this* point, but it may be doubted whether a store stocked and run on this plan for six months could be sold for enough to pay the legal expenses of winding up the concern. The editors ask this pertinent question: "If we cannot trust our best druggists, may we safely rely upon anybody?"

Indefatigable Workers.—Whoever will impartially survey the rapid advancement of materia medica in this country during the past fifteen years, and note its causes, cannot fail to credit the firm of Parke, Davis & Co. as the most important factor in the work. The restless outlook of this firm for new remedies and their accurate estimation of their therapeutic values are matters of common remark.

## ELECTRIC LIGHT WANING.

According to recent reliable accounts the Edison horse-shoe lamp is a failure, because of the inevitable cracking of the glass and consequent destruction of the carbons by the inrushing oxygen. The great inventor is, however, busy in search of better materials, both for the globes and for the carbon filaments, and possibly may yet find some means by which to convert defeat into victory.

Prof. Sawyer, now in jail for an attempt to kill his neighbor, Dr. Theophilus Steele, will probably postpone his frantic efforts to improve his own lamp and prove that of Edison a fraud. Meanwhile, the Brush system of lighting seems to be quietly achieving considerable success. Although complete success has not yet crowned the efforts of inventors in this line, the science of electricity has been so remarkably advanced by recent experiments that we feel assured the chasm beyond which lies success will yet be bridged.

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DEATH FROM INSOLUBLE PILLS.—In North Carolina, a lady, having died from inflammation and suppuration in the abdominal cavity, not induced by any known cause, a *post mortem* examination was made, by which it was discovered that death had resulted from the impaction of five or six hardened pills in the appendix vermiformis. As these pills were not administered during her last illness it was not known how long they had been there or whether all entered at the same time.

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ONE of our exchanges says that reading a medical journal sandwitched with advertising pages reminds him of taking alternate bites of an orange and a lump of assafœtida. To us, finding one of those highly colored leaves in the midst of an entertaining article seems more like finding a worm in a peach, and always tempts us to pitch the thing away.

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HAVE HORSES FAITH?—The editor of one of our exchanges has been treating horses with almost infinitesimal doses, and because they got well (sooner or later) thereafter, exultingly asks if horses have faith? No. But many doctors have so much faith in their theories that they are unable to distinguish between *post hoc* and *propter hoc*.

## NOTES AND QUERIES.

What is Carbolic Acid Solution? Ten per cent. of water added to crystallized carbolic acid renders the mass liquid, which should be designated *liquid carbolic acid.* In the present U. S. P. a preparation containing one part of carbolic acid to nearly sixty-one parts of water is officinal. In the forthcoming Pharmacopœia it has been proposed to make the proportions two parts of crystallized acid to ninety-eight parts of water, under the title of *aqua acidi carbolici.*

What are Blue Galls? Nut galls of every variety are of a dark olive green, or sometimes dull blue tint while yet green. As the gall grows older its circulation of juices ceases, and it gradually becomes lighter in color and in weight, and at the same time loses in part its intense astringency. The galls collected in Syria and shipped from Aleppo are of a darker color than most others in the market, and hence are sometimes designated in commerce as "blue galls."

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THE ANIMUS OF THE ARTICLE.—Recently we called attention to the prominence given by the *Boston Journal of Chemistry* to the flashy and sensational articles which from time to time appear in our daily papers, purporting to be the startling revelations of science when applied to our ordinary articles of food and drink. The editor now says he did not fully credit the articles, which from our appreciation of his intelligence in scientific matters we readily believe; but from the statement he then made, that such outrageous frauds were not perpetrated in his city, we felt it all the more our duty in defense of our mercantile and manufacturing interests to deny, as we could do truthfully, their existence here to anything like the extent indicated by the expositions of the chemists. We are not apologists for sophistication or adulteration, as our numerous appeals for legislation in this respect amply prove; but while we freely admit the existence of a vast amount of rascality in our midst, still, we believe that our merchants and manufacturers give their customers as good and pure goods as can be had elsewhere in this country. The increasing volume of our trade in every line demonstrates that the people are of the same opinion.

## REVIEW OF CHICAGO DRUG MARKET.

Jobbers report trade as very satisfactory in every respect. Opium continues firm, but has not advanced to the extent anticipated by dealers a month ago. Owing to the smallness of the crop of peppermint last year and to the prospect that it will be less this year, the oil has advanced to $4.25 in lots, and will probably go higher. Tonqua beans are held by speculators and are now firm at $2.25. Balsam Peru has attained the enormous price of $4.00 to $4.50 per pound. Balsam copaiba is advancing slowly. Quinine is steady at $3.35, but morphine has reached $5.25, with no immediate prospect of a decline.

| | | |
|---|---|---|
| Acid, Nitric | lb. | 12 @ 14 |
| " Tartaric | " | 53 @ 55 |
| Aloes | " | 17 @ 50 |
| Amm., Carbonate | " | 22 @ 25 |
| " Muriate | " | 14 @ 16 |
| Bleaching Powder | " | 4 @ 5 |
| Blue Vitriol | " | 11 @ 12 |
| Borax | " | 12½ @ 13 |
| Camphor | " | 35 |
| Cantharides | " | 1.35 @ 1.50 |
| Cassia | " | 25 @ 30 |
| Castile Soap | " | 8½ @ 18 |
| Chamomile Flowers | " | 40 |
| Cinchonidia, oz. bots | oz. | 1.15 |
| Cloves | lb. | 43 @ 45 |
| Cream Tartar (pure) | " | 36 @ 38 |
| Cubebs | " | 22 @ 25 |
| Cuttle Fish Bone | " | 22 @ 25 |
| Ergot | " | 75 @ 85 |
| Ginger, Afr | " | 10 @ 15 |
| " Jam | " | 25 @ 30 |
| Glycerin | " | 18½ @ 85 |
| Insect Po | " | 65 @ 75 |
| Iodine, Resub | " | 6.50 @ 6.75 |
| Ipecacuanha Po | " | 1.65 |
| MERCURIALS— | | |
| Blue Pill | " | 50 |
| Calomel | " | 70 @ 75 |
| Corrosive Sub | " | 60 @ 65 |
| Mercurial Oint | " | 50 @ 55 |
| Red Precipitate | " | 80 @ 85 |
| Morphia Sul. P. & W. ⅛ oz. | | 5.25 @ 5.50 |
| Nutmegs | lb. | 1.10 |
| Oil, Anise | " | 2.25 @ 2.50 |

| | | |
|---|---|---|
| Arnica Flowers | lb. | 18 @ 20 |
| Assafœtida | " | 23 @ 25 |
| Balsam Copaiba | " | 80 @ 85 |
| " Tolu | " | 85 @ 90 |
| Bees-wax | " | 30 @ 33 |
| Oil Bergamot | " | 3.25 @ 3.50 |
| " Cassia | " | 1.50 @ 1.60 |
| " Castor | gll. | 1.00 @ 1.10 |
| " Lemon | lb. | 3.50 @ 3.75 |
| " Olive | gll. | 80 @ 3.50 |
| " Pennyroyal | lb. | 1.25 @ 1.30 |
| " Peppermint | " | 3.50 @ 3.75 |
| " Sperm (pure) | gll. | 1.50 @ 1.60 |
| " Wintergreen | lb. | 4.25 @ 4.50 |
| " Roses | oz. | 5.00 @ 8.00 |
| Opium | lb. | 7.50 |
| Pepper, Cayenne | " | 25 @ 28 |
| Potass., Bromide | " | 40 @ 45 |
| " Chlorate | " | 22 @ 25 |
| " Iodide | " | 4.75 @ 5.00 |
| Quicksilver | " | 55 @ 60 |
| Quinine, P. & W., 1 oz. btls. | | 3.35 @ 3.40 |
| Salicin, 1 oz. vials | oz. | 45 @ 50 |
| Santonin, 1 oz. vials | " | 85 @ 90 |
| Seed, Canary | lb. | 4 @ 5 |
| " Hemp | " | 4 @ 5 |
| Senna | " | 18 @ 25 |
| Seneka Root | " | 80 @ 90 |
| Shellac | " | 45 @ 52 |
| Soda, Bicarb | " | 4½ @ 6 |
| " Sal | " | 1¾ @ 3 |
| Squills | " | 14 @ 16 |
| Sugar, Lead, white | " | 18 @ 20 |
| Tonqua Beans, Angostura | " | 2.25 |

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## COCCUS RED.

BY R. ROTHER.

| | | |
|---|---|---|
| Take of | Cochineal, (whole) | 8 troy ounces. |
| | Alum, in fine powder | 2 " " |
| | Citric acid | 1 " ounce. |
| | Chlorhydric acid | 1 fluid " |
| | Ammonia water, 16 to 18 per cent | 2½ " ounces. |
| | Alcohol, strong | 4 " " |

Disodium carbonate, sodium chloride and water, of each sufficient. Mix the chlorhydric acid and two troy ounces of sodium chloride with forty-four fluid ounces of water and pour the solution upon the cochineal contained in a suitable vessel. After macerating the mixture for two days, with occasional stirring, decant the liquid and set it aside. On the residue pour thirty-two fluid ounces of water, and after a two days' maceration, as before, again decant the liquid and unite it with the previous decantate. The residue is now again mixed with thirty-two fluid ounces of water, containing eight troy ounces of sodium chloride in solution, and after having macerated for two days the mixture is poured onto a strainer and subjected to strong pressure. The colate is now incorporated with the mixture of the first two macerates, and the resulting liquid after a sufficient repose is decanted from the sediment. Dissolve the alum in the clear decantate and add the ammonia water, pour the mixture upon a plain filter and then wash the collected precipitate with water until practically freed from saline solution. Dissolve the citric acid in four fluid ounces of water and add disodium carbonate in large crystals until the effervescence of carbonic oxide ceases. In this solution now dissolve the washed aluminum carminate with a gentle heat, add water to the measure of twenty-eight fluid ounces, then the alcohol, and mix.

In a former discussion of this topic the writer pointed out the various defects of the usual method by which cochineal coloring is prepared, and then submitted a new process, in which diverse drawbacks of the older operation did not occur. But the otherwise admirable features of the improved formula were not sufficiently potent to overcome the radical faults dependent upon the intrinsic character of the incorporated components. In order to achieve a result more thoroughly representative of the pure coloring principle, in an unincumbered, more definite and permanent form, the writer dissected the formula, as it were, and independently examined the several parts as to their behavior and appropriateness in this connection.

Since the dibasic carminic acid solely possesses the tinctorial property of cochineal, the endeavor was directed towards its expeditious and complete elimination from the attendant inert, cumbrous and putrescible matters constituting the body of the insect. Chlorhydric acid with sodium chloride in weak aqueous solution, followed by a saturated solution of sodium chloride, by means of remaceration, was found the most satisfactory and efficient agent for rendering a preliminary separation of the carminic acid from the gross of the matrix. The *n. a.* of cochineal with a weak acidulated salt solution is 1.5, but a saturated solution of sodium chloride causes the distended material to shrink and submit to subsequent pressure to such an extent that the nearly exhausted shell weighs after pressing less than the original substance. Thus, through the ready solvent action of the first menstruum, the absorbent and contractive property of the last and the self-clarifying tendency of the mixed macerates, the first desideratum was attained.

As carminic acid alone does not constitute the tinctorial agent of cochineal coloring, or coccus red, its simple isolation from the crude extraction is not the immediate aim; but as aluminum carminate is the objective body next in view, the succeeding step lies in that direction. Aluminum carminate is of variable composition, not only by virtue of the basicity of the acid, but also through the peculiarity of the metallic radical. The desirable compound in this case is, however, obtained without difficulty by treating the crude solution first with alum and then with ammonia. The normal carminate is slightly soluble in water, but is rendered insoluble by the employment of a moderate excess of alum, whereby insoluble basic carminate is produced.

Further progress in the operation now consists in bringing the aluminum carminate into an available solution. This is effected by the agency of monad salts of certain vegetable acids, resulting, however, in a closer union than mere solution and the generation of a double [illegible] rich red tint characteristic of coccus red. Normal sodium citrate is the most adaptable solvent, and hence the writer has incorporated it with the new formula. Alcohol is added as before to obviate septic degeneration, which would otherwise occur.

The new formula also admits of greater concentration than was heretofore possible. The proportion above adopted is one troy ounce of cochineal in four fluid ounces. A solution double this strength is originally obtained after solution of the precipitate. The dry compound may also be prepared by precipitating the concentrated solution with alcohol or spreading it on glass plates, thereby obtaining it either as a pinkish powder or in dark red scales.

The aluminum carminate obtained by precipitation from the crude solution as above directed is a dark purple red powder soluble in acids and alkalies, yielding with the first bright scarlet, with the second deep purple solutions. Yet any solution of a carminate, in whatever degree of acidulation, when diluted with water to a certain point, changes suddenly from scarlet to purple, or deep pink, according to the amount of carminate present. Dilution with alcohol in the same manner does not alter the color, but subsequent addition of water immediately turns it to pink. Aluminum carminate is also soluble in aluminum citrate with a purple color. Previous to the adoption of the writer's new formula for coccus red it was the intention to prepare and utilize the aluminum citro-carminate to the exclusion of monad radicals, but the undesirable purple tint would not permit of its application. In order to produce the necessary aluminum citrate a hot concentrated solution of disodium carbonate was treated with powdered alum, so as to insure a slight excess of the former. After washing the rather voluminous precipitate until barium chloride no longer disturbed the washings, it was added to a proportionate amount of citric acid. A barely perceptible effervescence of carbonic oxide took place, but the aid of a gentle heat expelled it with profusion until solution was complete, which speedily resulted. This analogy was to be expected, since if a ferric hydrocarbonate could appear under such conditions much more certain must then be the generation of the corresponding aluminum compound. Normal aluminum citrate does not appear to be a permanent salt; since a solution containing one-fourth salt readily deposits crystals of a basic compound on standing a few days in a cool place or when allowed to evaporate spontaneously.

Whilst endeavoring to precipitate the carminic [illegible] extraction in some useful form a portion of the solution was saturated with sodium chloride and treated with ammonia in excess. Ammonium carminate was thrown down as a purple powder and a similarly colored supernatant liquid resulted. The ammonium carminate readily united with the aluminum citrate, producing a fine red solution. This reaction showed that the coloring base of coccus red could also be obtained by inverse synthesis, in the manner proposed by the writer some years since for the more direct preparation of ferric double citrates.

On treating another portion of the crude solution with aluminum hydrate, precipitated by ammonia, no satisfactory product was obtained. The mixture on treatment with acetic acid formed a solution from which alkalies or their carbonates failed to give a precipitate, the generated monad acetate appearing to hold aluminum carminate in solution. The addition of calcium carbonate, with a view to neutralize excess of acetic acid, resulted in a most astonishing reaction by precipitating a copious very gelatinous greenish black magma. This precipitate was slightly soluble in water, yielding an inky solution. It contracted remarkably on the addition of sodium chloride to saturation and would then admit of rapid filtration. The filtrate still possessed a deep purple color, from which ammonia in excess threw down an abundant pink precipitate, whilst the circumjacent liquid retained a light scarlet color. The black calcium compound readily dissolved in acids with the usual scarlet solution, and likewise dissolved in alkalies with deep purple solution. Solution of calcium hydrate, however, instantly changed its color to light pink. It is slowly decomposed by ammonium sulphate, yielding a purple solution. It is also quickly decomposed by aluminum sulphate, giving a purple solution, which on dilution with alcohol still retained the color, and on spontaneous evaporation left a purple, apparently crystalline, residue. Compounds of magnesium or barium corresponding to the black calcium precipitate could not be produced, and in fact the calcium body required a peculiar treatment, but it would invariably result from an acidulated solution and calcium carbonate. This body often deposits on the walls of bottles containing tincture of cochineal or compound tincture of cardamom, and then has a striking resemblance to patches of mould. It also imparts that gelatinous consistence and black color to cochineal [illegible], owing to the presence of chalk as an adul[illegible]

In consideration of the fact that large dilution with water turns the color of carminic acid solutions, and in further view of the fact that the black calcium body is generated only under peculiar conditions, as, for instance, the addition of lime water to a definite excess of carminic acid, but especially owing to the manner of its formation in presence of calcium carbonate, whereby acid calcium carminate and acid calcium carbonate are retained in solution, it appears that the black compound must be a calcium anhydro-carminate. Among the carbon derivatives or so-called organic compounds are numerous acid oxides or anhydrates, which form no acids properly so-called. They, however, combine directly with basic oxides or anhydrates forming regular salts. They can also remove half the base from neutral carbonates, converting the latter into acid carbonates, but ordinarily fail to carry the decomposition of these any further. The familiar examples of such bodies are santonin, cantharidin, tannin or gallic anhydrate and various acid resins. A sufficiency of strong acid again liberates these from their combinations in the anhydrous condition. But in certain cases a deficiency of acid will not free the anhydrate, as this superimposes itself upon the undecomposed portion, generating anhydro or pyro salt. Since carminic acid, in consequence of large dilution with water, very probably becomes anhydrous, it seems plausible that under the appropriate conditions a calcium pyro-carminate will form. Thus in this instance the presence of water in certain proportion determines dehydration, a result of no rare occurrence, especially when the action of heat is made an auxiliary. But there are equally numerous instances where such circumstances effect the reverse. The above cases of decomposition and recomposition, however, pertain only to such combinations where the isolation of acid and base end merely in the reconstitution of acid or basic oxide. But there are also many categories of salts that, having been generated by special methods, do not simply yield anhydrates, but in which either acid or base or both break up into yet simpler parts. A pertinent illustration of this is found in the familiar sodium thiosulphate, potassium cyanate, potassium chlorate, and various other salts of higher oxygenated acid radicals. Thiosulphuric acid immediately after liberation disintegrates not into water and an assumed thiosulphuric acid oxide, but into water, sulphur and sulphurous oxide. When the thiosulphate thus decomposed is a double salt [illegible] [illegible] certain heavy metallic radicals the disruption is still greater, as then the base is also involved with it.

The evolution of sulphurous and carbonic oxides following the destruction of sulphites and carbonates by means of stronger acids are the extreme cases of the dissociation of acids where the integrity of the acid oxide is maintained. The inclination of these bodies for water is so feeble that scarcely a simple solution, much less a firmer compact, can ensue. Immediately related to these in that regard is arsenous oxide, which, although largely soluble in water, fails to generate an acid. It, however, combines directly with basic oxides and hydroxides, and even expels carbonic oxide from carbonates, forming definite superbasic, normal and super-acid salts, the latter corresponding to anhydro or pyro-salts. Chromic anhydrate, although very soluble in water, does not enter into combination with it. Whilst generating very definite dibasic normal salts, it is yet incapable of giving rise to normal acid salts, that is, such containing basic hydrogen, thus: $KHCrO_4$. But it forms anhydro-salts of the composition $K_2CrO_4.CrO_3$ and $K_2CrO_4.2CrO_3$. Silicic oxide is insoluble in water. It yields directly with basic oxides and hydroxides and on fusion with various salts, superbasic, normal and pyro-salts. Treatment of these with stronger acids eliminates two definite acid hydrates, differing by one molecule of water and being tetrabasic and dibasic, soluble and insoluble respectively. Phosphoric anhydrate in contact with water energetically absorbs a definite amount of it in the production of metaphosphoric acid, which is yet a partial anhydrate. A higher temperature in aqueous contact converts this into pyrophosphoric acid, another partial anhydrate containing one more molecule of water. Continued boiling of this completes the absorption of water in the formation of orthophosphoric acid. Arsenic anhydrate in the presence of abundant water always yields the trihydrate. The di and mono hydrates are obtained by subjecting the former to heat. However, the simple solution of these in water reconstitutes the trihydrate. Boric acid is obtained by dissolving boric oxide in water. With basic oxides, hydroxides or carbonates in proper proportion this forms normal borates, thus: $NaBO_2$. But an excess of acid generates anhydro or pyroborates, thus common borax is $2NaBO_2.B_2O_3.10 H_2O$. [illegible] in the presence of sufficient water invariably [illegible] acid; although a deficiency generates pyrosulphuric acid, a partial anhydrate. Sulphuric oxide heated with normal sulphates produces pyro-sulphates. These, however, in the presence of water break up into normal sulphates and sulphuric acid. Sulphuric acid is dibasic and capable of forming both normal and acid salts. Sulphuric oxide is therefore the first member in this series that can generate anhydro-salts and an acid qualified to form acid salts properly so-called. Passing now to acetic acid, we find that its whole hydrated molecule can attach itself to other acids. But especially characteristic is the fact that it can likewise unite with normal acetates. In the case of tannin or gallic anhydrate we have yet a different manner of coalescence. Tannin unites directly with basic oxides and hydroxides, and as above already stated removes part of the base from carbonates and other salts. The resulting compounds are not, however, gallates, but are denominated tannates. It appears, therefore, that gallic anhydrate superimposes itself upon oxides, hydroxides and salts in a manner characterized by the formation of anhydro-salts in general.

Now, from the exhibition of the relationship subsisting between the successive members of the above series of acid oxides, it becomes evident that no straight line can be drawn where chemical union and mechanical contact or cohesion may be distinguished. In fact, the transition is so imperceptible that a series of innumerable parallel straight lines would be required to represent it. Then, since no real boundary line can be perceived, we are compelled to assume that between the merest mechanical contact, through the state of solution, through the assimilation of water indefinitely, the assumption of water of crystallization, the partial acidification or superposition, the complete acidification, to perfect quantivalence or atomicity, there is no distinction save that of degree. But without qualification such a distinction would not invalidate the prevalent view of chemical union. It would still countenance the assumed tractive force of affinity, acting with all possible degrees of intensity. However, a tractive force fundamentally considered is inconceivable. There is but one force in nature, and that is propulsion. Not only is all matter swayed by this influence, but also owes its temporary existence and genesis to the ceaseless right motion of its primordial rudiment, the infinitesimal plenum, which the writer has termed atomyl (PHARMACIST, Dec., 1879). The definition of matter implies the conception of length, breadth and thickness, but an infinitesimal plenum cannot be described in terms of matter; no number is so small as to represent the magnitude of this cosmic unit. It can only be known by its effects in the forms of matter. The differential calculus can only indicate how by the accumulation of the atomyl points the genesis of matter in space of length, breadth and thickness is effected. The writer has previously described the generation of elementary molecules as the rhythmic contact and displacement of various atomyl groups in perpetual motion. Chemical union was also specified as the coalescence of molecules, with coincident rhythm, and redirection of the atomyl paths, or force waves of the compound molecule thereby resulting. Now, since chemical union is not dependent upon an inconceivable hypothetical tractive force, but appears to be the result of coincidence of the wave systems of the involved atomyl groups, then the property of quantivalence or atomicity must be referred to the relative number of inferior and superior culminations of the wave resultant traversing the molecule. Thus, for instance, a dyad will have twice as many culminations as a monad, a triad, three, etc. When, therefore, monad and dyad molecules coalesce, the dyad molecule having two coincidences of culmination to the monad's one, then two monad molecules may unite in the compound rhythm. This same property will likewise explain all the inferior degrees of composition cited above in reference to chemical action generally. The great compound molecular wave, being made up by composition of subordinate waves, of greater and greater diversity, coursing through the primitive or elementary molecule, will then determine the atomicity, and its component wave systems in regular and imperceptible gradation will similarly permit all the inferior orders of union down to the merest contact. But all orders of chemical union are further dependent upon a universal pressure, extending throughout the genetic system, termed gravitation. This force, as the writer has elsewhere stated, is immediately referable to wave action of the gravific ether, but more remotely derived from the pressure exerted by disrupting matter at the confines of the genetic system. All masses within this system tend towards each other and mutually towards the center of the system. Now, the actual gravitation induced by masses results from reflected waves of the ether interfering with the incident waves. That this interference should be more intense and [illegible] around the masses and diminish as the square of the distance increases is evident. Hence this suspension of resistance naturally forces matter into contact. Magnetic attraction and the repulsion of bodies similarly electrified undoubtedly indicate a similar interference, or either reduplication of circumambient wave systems.

## HAGER'S SCIENTIFIC DINNER PILL.

| | | |
|---|---|---|
| Sulphate of cinchonidia | 75 | grains. |
| Pepsin | 1 | ounce. |
| Powd. ginger | 45 | grains. |
| " allspice | 45 | " |
| " cardamoms | 45 | " |
| " gentian root | 90 | " |
| " marshmallow root | 90 | " |
| " tragacanth | 90 | " |

Make into a pill mass with the following excipients:

| | | |
|---|---|---|
| Glycerin | 150 | grains. |
| Concentrated hydrochloric acid | 90 | " |
| Water | 90 | " |

Make into three hundred pills, which may be gelatine or sugar coated, but must not be subjected to too great a heat. The dose is: After meals, four to six pills, within one hour, or until the feeling of oppression has disappeared. In loss of appetite, take, two or three hours before meal, one or two pills every hour, and after meals four pills.

P. S.—We reprint the above because when Hager speaks the world ought to listen, but add *sotto voce*, if you do not eat too much dinner you will not need any pills, and besides will have a good appetite for the next meal.

# THE ART OF DISPENSING.

## OINTMENTS.

**Boracic Acid Ointment.** (Lister's.)—

| | |
|---|---|
| Boracic acid, in fine powder | 1 part. |
| White wax | 1 " |
| Paraffin | 2 parts |
| Almond oil | 2 |

According to J. A. Culfe the best method of dispensing this is to dissolve the wax and block paraffin in the almond oil, transfer to a warm mortar, add the boracic acid in fine powder, and triturate till the mass becomes creamy. Transfer, in small quantities at a time, to a cold mortar, and continue trituration till a smooth ointment is formed.

It is advisable to warm the acid before adding it to the fats.

**Unguentum Hyoscyami.**—

| | |
|---|---|
| Ext. hyoscyami | ʒ i. |
| Adipis | ℥ i. |

(*Dorvault.*)

| | |
|---|---|
| Ext. hyoscyami, | |
| Adipis | aa ℥ ss. |
| Glycerini | ʒ i. |

(Middlessex Hospital.)

**Glycerin** is most easily incorporated into ointments by using a mortar which has been first thoroughly warmed by hot water.

| | |
|---|---|
| Liq. antim. terchlor | ♏ v. |
| Hydrarg. ammon. chlor | gr. xx. |
| Hydrarg. nit. ox | gr. xv. |
| Potassæ subcarb | ʒ i. |
| Adipis | ℥ i. |

This ointment retains its pink color if the carbonate of potash be rubbed down with a little lard, but if dissolved in a few drops of water, the final addition of the liq. antim. chlor. produces a dirty-brown color, due to the formation of ferric hydrate, iron always occurring in commercial samples of "butter of antimony." In a fatty medium the incompatibles are unable to react. This is further instanced by the fact that tannin ointments may with impunity be made with a steel spatula, as no blackening occurs unless an aqueous ingredient is present.

### PLASTERS.

**Plaster** paper shapes may generally be attached to skins by merely damping the former. If any adhesive material is used, a thin starch paste is the best, and it should be used freely, so that the “sh[illegible]” [illegible]ld not [illegible] hen the surface of the skin in removal.

[illegible] uld be about seven inches in diameter, exclusive of one inch margin, with a hole near the middle of one inch in diameter and with a piece cut out beginning from the hole and gradually widening towards the circumference to about one inch, so as to allow the plaster to be adapted to the curved surface of the breast.

**Fucus Crispus Cataplasm.**—Stretch a sheet of wadding on a frame, spread over it a concentrated and mucilaginous infusion of fucus crispus. Place over it another sheet of wadding and strike it lightly with a brush, that the mucilage may penetrate equally throughout. Lay it over a moderately-heated stove and allow it to dry. When required for use it should be placed on a large plate, and sprinkled with nearly boiling water. It swells considerably, and absorbs a large quantity of water.

**Emp. Canthar.** should not be sprinkled with pulv. canthar., but a warm spatula used to smooth it.

**Acid Carbolic.**—A cold saturated solution in water contains five per cent. When a larger proportion is ordered in a mixture with water it can be suspended by triturating the acid with an equal quantity of mucilage of acacia, and gradually adding the water. This addition, however, should not be made without authority.

### PESSARIES AND SUPPOSITORIES.

We have frequently heard complaints of the difficulty of getting nicely-finished suppositories and pessaries from the gun metal moulds now generally employed in the manufacture of these medicated balls. The supposition may be wrong, but from experience we are inclined to impute much of the difficulty to an imperfect knowledge of the conditions regulating the expansion and contraction of both mould and substance used in their production. If, for example, the substance (say, oil of theobroma) be poured into the moulds at a temperature much above 140° or below 130°, the melting point being 124°, it will be found that the balls, if they come out at all, will in either case be broken and imperfect, for this reason, namely, that above the melting point the theobroma does not expand under different increments of heat in the same degree with the metal. Consequently, the higher the temperature of the theobroma the more is the metal expanded, which, cooling first, contracts on the ball like a vise. This, together, probably, with unequal cooling, produces unequal elasticities within the ball, which sufficiently accounts for the moulds refusing [illegible] balls, as well as for their cracked and uneven appearance. On the other hand, should the theobroma be poured into the mould at too low a temperature, the metal at once cools it to such an extent that contraction within the mass cannot take place, and the same result ensues as in the previous case, but from the very opposite cause. The proper plan, therefore, is to heat the substance to the temperature already indicated, and having first breathed into the different cavities, so as to cause a thin film of moisture to adhere to the sides of the metal, pour the melted substance quickly in. If expeditiously and properly done, the balls when cool should slip from the mould without the least trouble, having a beautiful polished finish, and, what is more important still, having a uniform composition and structure, and not with the active medicinal agent all concentrated at the apex, as it is always the case when the heat applied has been excessive.

Another difficulty frequently experienced is in mixing with the melted theobroma unmiscible substances, such as aqueous solutions, extracts, etc. In such cases the difficulty is generally overcome by first rubbing the solution or extract with a small portion of the unmelted theobroma, until the mass is thoroughly homogeneous, when it seldom fails to incorporate with the melted portion. A ball, for example, containing extract of belladonna, is not unfrequently ordered by medical practitioners. This extract fails to mix in any proportion with the melted theobroma, nor does the addition of such solvents as water, spirit, oil, glycerin, etc., which sometimes in other cases assist, at all facilitate its incorporation. If, however, the extract be first thoroughly rubbed up with a piece of the theobroma in a mortar, and then added to the melted portion immediately before pouring into the moulds, a very superior ball will be produced.

The settling of the active ingredient of some balls at the apex has already been referred to. We have seen a ball containing bromide of potassium sent out with all the bromide at the extreme point, forming a hard, gritty, almost insoluble mass, which must have been not only exceedingly disagreeable to the patient, but even dangerous. This is perfectly inexcusable, and need never occur if care be taken to have the substance first thoroughly impalpable, and then incorporated with a small piece of the theobroma previous to adding to the melted portion at a temperature a little over the melting point. There is, moreover, [illegible] overheating of the mixture, where powders [illegible] such as bromide and iodide of potassium, or acetate and iodide of lead, are ordered, namely, the impossibility of an equal division of the substance where a number of balls are being simultaneously made. The powder falls to the bottom of the dish, owing to the fluidity of the theobroma, and no amount of stirring or dexterity of manipulation will insure its equal distribution. The following are the strengths of some of the non-officinal balls as ordered by a leading physician:

| | PESSARIES. | SUPPOSITORIES. In each |
|---|---|---|
| Atropia | 1-20 gr. | — |
| Belladonna extract | 5 grs. | ½ gr. to 2 grs. |
| Opium | 2 grs. | 2 grs. |
| Bismuth oxide | 15 grs. | 10 grs. |
| Zinc oxide | 15 grs. | 10 grs. |
| Alum | 10 grs. | — |
| Alum and catechu | 10 grs. of each. | — |
| Acetate of lead | 7½ grs. | — |
| " " and opium | 5 grs. and 2 grs. | — |
| Gallic acid | 10 grs. | — |
| Iodide of lead | 5 grs. | — |
| Sulphate of zinc | 10 grs. | 2 grs. |
| Iodide of potassium | 10 grs. | — |
| Bromide of potassium | 10 grs. | — |
| Gall and opium | — | 5 grs. and 1 gr. |
| Santonin | — | 3 grs. |
| Aloin | — | 1 gr. |

DR. WILSON, of the *Medical Advance*, exultingly sets forth as the triumphant achievement of Homœopathic science: "We have achieved the great result of isolating the drug-force from the drug itself."—*Med. Tribune.*

## SOME OF THE USES OF PARAFFINE.

In addition to the properties which have brought it into such extensive use for illuminating purposes, paraffine has qualities which give it an exceedingly wide range of useful applications. White, clean, incorruptible, odorless, tasteless, plastic, water-repellant, a non-conductor of electricity, and but slightly affected by most chemical agents, it needs only to be better known to become the most variously useful of the hydrocarbons.

For water-proofing fabrics for wearing apparel, military equipment, and the like, it is much better than rubber, since it is odorless, and does not become sticky with heat. Among the most gratefully acknowledged of the many gifts sent out to Livingstone in the wilds of Africa were boots and blankets thus prepared, the one enabling him to travel through mud, the other to sleep in it with comparative comfort. For the water-proofing of tent cloths, ground sheets for soldiers, and other articles of the sort, it has been found equally serviceable. A more generally useful application of paraffine is for lining of casks and other wooden vessels, to keep them sweet, and to prevent either the absorption of the contents by the wood or their escape through the pores. It keeps them from becoming musty and foul, and it prevents the escape of the life of the liquor, carbonic acid gas.

Being indifferent to most chemicals, paraffine serves the same purpose equally well in the laboratory of the chemist and the chemical manufacturer. In the manufacture of gun cotton, for example, wooden tanks have been used for holding the mixture of concentrated sulphuric and nitric acids employed in that process, the protection of the wood being complete and lasting. Wooden boxes, protected in the same way, have been similarly employed in the construction of voltaic batteries. As a non-conductor of electricity, paraffine is further useful as an insulator, for which it is now extensively employed in electric telegraphy; also in connection with batteries for medicinal use, especially as an acid-proof coating to insulated conducting wires. In surgery it has been found an excellent material for covering the splints in cases of fracture.

Those troubled with loosely fitting plates of artificial teeth, owing to absorption of the gums, can easily remedy the effect by dropping upon the plate a little melted paraffine, from a lighted candle or otherwise, replacing the plate while the paraffine is yet warm. Being clean, tasteless, plastic at a low temperature, and unaffected by saliva, this substance will be found much superior to wax or any other material, a few drops rightly placed making a perfect fit with a plate otherwise unwearable.

In the laundry paraffine rubbed on the hot flat-iron imparts a [illegible] to starched goods, greatly lightens the labor of ironing, and leaves no greasy stain. For this use it is much superior to spermaceti. Friction matches are now prepared with paraffine in place of the sulphur formerly employed; it burns without odor, and goes out instantly, greatly reducing the dangers of accidental fires. Dissolved in naphtha, paraffine has been applied with excellent effect to decaying brick and stone work, filling the pores of the brick or stone, and putting a stop to the destructive action of the weather. Fine woodwork exposed to the elements might be protected in the same way. Heated with sulphur to a moderate high temperature, paraffine is decomposed with the evolution of abundance of sulphuretted hydrogen. —*Monthly Magazine of Pharmacy.*

## EXPLOSIVE COMBINATIONS.

Chloride or iodide of nitrogen is formed by the addition of chlorine or a chloride, or iodine or an iodide, to ammonia; and this compound is liable to violent explosion on coming in contact with phosphorus, iodine, arsenic, olive or cod-liver oil, turpentine, etc.

Tincture of iodine and ammonia are often prescribed together, and iodide of nitrogen is necessarily produced. The rarity of accidents is due to the fact that the iodide is not free from water.

Mr. Rice, in *New Remedies*, mentions an explosion resulting from the preparation of the following prescription, iodide of nitrogen being evidently the cause:

Iodinii........................................15 grains.
Lin. camp. co.,
Lin. saponis co.........................āā 60 grains.

A concentrated solution of iodine and iodide of potassium was filtered through paper. The next day the filter was touched to be removed, when the paper and funnel broke into atoms with a loud explosion.

Concentrated solutions of permanganate of potash in alcohol are liable to explosion, and bichromate of potash in alcohol may ignite the latter. Aqua regia will also often cause an ĕxplosion with alcoholates or essences.

Chlorate of potash mixed dry with tannin is dangerous, and an explosion has resulted from its mixture with muriate of morphia. The following prescription was presented at a pharmacy in New York. It cannot be prepared without an explosion:

| | | |
|---|---|---|
| Lactis sulphuris | grains | iij. |
| Antimon. sulph. aurant | " | iij. |
| Zinci valerian | " | i. |
| Potass. chlorat | " | ij. |

M. f. pulvis. dentur doses tales No. X.

The addition of nitrate of silver to essence of bitter almonds to remove the hydrocyanic acid has been followed by ignition.

The following compounds have at different times caused more or less serious accidents:

| | | |
|---|---|---|
| Calcis hypophosphitis | grains | viij. |
| Potassæ chloratis | " | xij. |
| Ferri lactatis | " | v. |

The trituration of hypophosphite of lime alone has sometimes resulted in an explosion. A man was killed at Erfurt while drying one kilogram of the salt in a sand bath. It is said to be most dangerous if quite pure.

| | |
|---|---|
| Glycerini | f. ʒ ij. |
| Acidi chromici | ʒ i. |

This mixture can be made by adding the acid to the glycerin by very slow degrees.

A mixture containing chlorate of potash, tincture of perchloride of iron and glycerin once burst in the pocket of a patient.

Pills containing oxide of silver are liable to inflame if they become warm. They have taken fire in the pocket of a customer, causing severe burns.

Other compounds liable to inflame during or after preparation are permanganate of potash and extract of milfoil, permanganate of potash and reduced iron in pills, golden sulphuret of antimony and chlorate of soda in pills.

It is always dangerous to associate glycerin, or, in general, any deoxidizer, with easily reducible compounds, such as the permanganates, chromic acid, the chlorates, and some organic acids.—*Chemist and Druggist Almanac.*

## A NEW ANTISEPTIC.

It is stated in the Boston *Medical and Surgical Journal*, March 11, 1880, that at the meeting of the Boston Society for Medical Observation, held October 6th, 1879, Dr. Beach showed a specimen of styrone (styrryl alcohol or cinnyl alcohol, $C_9H_{10}O$ or $C_9H_9OH$). It is obtained by heating styracin or cinnyl cuniamate (a compound contained in liquid storax and in balsam of Peru) with caustic alkalies. It crystallizes in soft, silky needles, having a sweet taste and an odor of hyacinths, melting at 33° Fahr., and volatilizing without decomposition at a higher temperature. It is moderately soluble in water (about one part to twelve), freely in alcohol and ether. Dr. Beach had tested the efficiency of the antiseptic by applying it (one part to twelve of water) to a foul, ulcerated surface, with the effect of completely deodorizing it. The same surface was dressed with sheet lint saturated with an emulsion of the styrone and olive oil, one part of the former to twelve of the latter, covered with thin gutta percha, and the edges of the gutta percha fastened to the skin by collodion. At the end of five days the dressing was removed, and the accumulated secretions were found sweet, and having the odor of the styrone, which is fragrant. This dressing was repeated at different intervals with a like result; the granulating process progressed as well as if it were under a carbolized or thymolized dressing. The pure styrone is slightly irritating to a raw surface, causing a burning sensation, but diluted to one part in six, either of oil or water, the result is a non-irritating emulsion. In either form it is a perfect deodorizer of a foul wound, and does not interfere with the process of cicatrization. One part in twelve of oil or water is sufficiently strong to be effective. To determine the relative efficiency of carbolic acid, thymol and styrone the following test was made: Three ounces of normal urine from the same specimen were placed in each one of four clean glasses. To the first glass were added ten drops of pure carbolic acid, to the second ten drops of pure thymol, to the third ten drops of styrone, and to the fourth nothing. The open mouths of the glasses were filled with borated cotton, to protect the urine from dust. On the second day the urine without an antiseptic became decomposed, and was thrown away. The first specimen, containing carbolic acid, was offensive from the smell of decomposing urine on the sixth day, and under the [illegible] presented bacteria in the monad and rod forms; it had a strong ammonia odor from the first day. The second and third specimens, preserved by styrone and thymal, were in good condition at the time of making the report, fifty-nine days later, and were free from any urinous or offensive odor. No fungoid forms could be detected under the microscope at that time.—*Medical and Surgical Reporter.*

## LOVERS' EVANESCENT INK.

"Finest potato starch, 13.5 kilos., and powdered iodine, one kilo., are mixed and then rubbed through a sieve, then mixed with four liters of water and one liter of rectified spirit. The resulting black powder is allowed to stand for fourteen days, then dried and exposed to the air. The dry powder contains ten per cent. of iodine. The iodide of starch becomes soluble when heated with stirring in an enameled saucepan over a gentle fire. As soon as the powder is dry the operation is finished; it then emits a pungent smell. From time to time during the heating it must be ascertained whether the powder has become soluble, by heating some of it with water in an iron spoon. At a strong heat it yields a red solution with loss of iodine. In order to purify the powder and make it thoroughly soluble, of a violet tint in cold water, a concentrated solution is made by heating, so that it shows 7–8°. This solution is allowed to deposit for several days, decanted and precipitated with rectified spirit. The precipitate is strained, and dried in the drying closet. If excess of spirit is used in the precipitation, a gummy matter is thrown down, the presence of which is superfluous." A certain firm claims to be the sole manufacturers of the ink. They advertise that writing executed with it gradually fades away and cannot be restored by any chemical, and state "that the time it takes to fade depends on the paper that is used; if written with a perfectly clean steel or quill pen, on unglazed paper, the evanescence will be more rapid than when written on glazed paper. On some papers it will disappear in a day, whilst on other kinds it will take more than a week." I tried this ink, six weeks ago, on various sorts of paper, and I still find the writing quite visible. It can easily be restored to a jet black by exposing the writing to the fumes of iodine. Perfection has not yet been obtained in the production of this [illegible] ink; there appears to be some chemical either absent or not present in a sufficient quantity to induce a rapid evanescence.—Samuel Lawrence, in *Pharmaceutical Journal*.

## NOSTRUMS.

The manufacturers of such copyrighted medicines as physicians are asked to prescribe object very much to the application of the name of "nostrum" to their wares. They not only do not object to the application of the name to Perry Davis' Pain Killer, or Jaynes' Expectorant, or the Golden Medical Discovery, or any other of the thousand and one preparations which are advertised in flaming posters on fences and dead walls, or which take up so much space in the secular prints, but they highly commend its use in connection with these. When, however, it is applied to their compounds—medicines bearing names evolved from the inventive faculty of their own brains, and recognized in neither the pharmacopœias nor botanies of their own or any other land—they protest. Let us inquire whether or not this application of the term be correct. It is not denied by these makers that the goods on which they hold the exclusive right of manufacture cannot, because of the protection which the law affords in virtue of the copyright, be made by any other manufacturer. These medicines are, in point of fact, theirs. In speaking of them themselves they call them "ours," and no one dares infringe on their ownership of them, any more than he dares take the goods or chattels of another without a consideration or without their permission. Now, this is all that is implied in the "nostrum." A nostrum is not necessarily a secret medicine, but it is always a proprietary one, the word being from the Latin *noster*, meaning *ours*. Wherein, then, lies the difference?

These manufacturers assert the fact that they publish the formulæ of their mixtures as a reason why these mixtures should not have applied to them a name which has become opprobrious. But do not the manufacturers of the most notorious patent medicines also publish their formulæ? By consulting the records of the Patent Office at Washington, the formulæ of all of them may be procured, but the letters patent (from *pateo*, to open), while permitting their opening for the perusal of all who may desire, at the same time prohibits the appropriation of any of the ideas for which the letters were granted. While the proprietor of a copyrighted medicine asserts truly that his formula is published, he knows that it is equally true that this publication avails the profession nothing. The instant in which he might detect another manufacturer compounding a mixture from this formula and attaching to it the name he had given it he would seek the protection which the law provides.

It has always been a mystery to us how physicians, inordinate sticklers for the ethics of the profession as enunciated by the code, should support by their patronage pharmacists who, by copyrighting their preparations, live in open and flagrant violation of this code. Consistency, however, is a jewel, which some very estimable men seem never to have possessed themselves of.—*Therapeutic Gazette.*

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# CRUDE SEMI-SOLID PETROLEUM AS A THERAPEUTIC AGENT.

BY M. M. GRIFFITH, M. D.

I send herewith a sample of crude (semi-) solidified petroleum, such as accumulates on the tubing and casings of the wells of the Pennsylvania oil regions. It is as it occurs in its natural state, without any manipulation.

I have used it very extensively, in the form of pills, during the last year, in chronic bronchitis, asthma, catarrh and incipient phthisis. At my suggestion, many physicians have prescribed it with the most flattering results. It is now undergoing trial in several hospitals and eleemosynary institutions of the South. I have prescribed it in over a thousand cases indiscriminately, without receiving a single unfavorable report. Most of the cases were supposed to be tuberculous; from statistics accumulating, I think the report of cures in incipient tuberculosis will show an average percentage of cures of about 75 per cent.

In the advanced stages it affords more relief than any other remedy. I have usually advised patients to take it in connection with any medicine they were using that they thought beneficial; but most of them, after using the pills a few days, have relied upon them altogether.

The first effects of the pills were found to be expectoration, alleviation of the cough, relief to the breathing; night-sweats are deminished or altogether controlled, appetite and strength are gradually restored. I think it will show a larger percentage of cures in acute phthisis than [illegible] remedy. In chronic bronchitis and obscure lung troubles it acts almost specifically.

The crude petroleum has been long known as possessing valuable curative properties in chronic lung diseases; but the excessive nausea and the disagreeable eructations it produces has prevented its protracted use. I was led to the use of the semi-solid by the facility with which it can be made into pills. To further solidify it and get it into pill mass, I have used the following formula:

℞ Petroleum mass..........................℥ i.
Pulv. cubebæ, pulv. doveri..........āā ʒvi.
To make pill mass (pills, 5 grs.)

This, however, may be left to the judgment of the prescriber, as something must be used to make the mass of the proper consistency. I thought it advisable to use something beneficial. The dose of the semi-solid mass I have found to be about 2 to 3 grs., which an ordinary five-grain pill of the compound mass contains. It being harmless, no particular nicety may be paid in regard to dose; but much more than this will produce disagreeable eructations, tasting strongly of oil. I have named the semi-solid oil "crude petroleum mass" for convenience. It seems to be nothing more than the ordinary oil, less its volatile constituents, gases, etc. It accumulates on the iron of the wells that have long been flowing or pumped.—*New Remedies.*

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THE ARTIFICIAL DIAMOND PROCESS.—

"The crystallized carbon, as diamond known,
Manufactured can be, Mr. Hannay has shown.
From some hydrocarbon set hydrogen free
Near a nitrogen compound, that stable must be,
In the presence of metal—magnesium or sodium—
And the brilliant result is the jewelers' odium."

## CONFECTIO SENNÆ.

### CHAS. HATTERMAN, PH. G.

The most absurd formula in our Pharmacopœia is certainly that for confection of senna. How it is possible that this formula—which even the professors in our colleges of pharmacy denounce, by merely saying of it, "it is hardly necessary to know the details of this preparation, for it is never prepared by the pharmacist"— [illegible] in the Pharmacopœia is beyond my comprehension. [illegible] object of this preparation is to disguise the nauseous taste of senna and give this in an agreeable manner, what is the use of having figs and prunes and the almost impossible *modus operandi?* The purging cassia "also would be just as well out of it" as in it; it certainly does not increase its activity. And even if all the details have been most conscientiously adhered to, what is the result of our work? Why, miserable thin stuff, which, even if kept at a uniform temperature of 50° F., will spoil and ferment in a fortnight. To this Mr. J. H. Wilson will certainly testify. I submit the following, which, if it is not such an "elegant" preparation, at least has the admirable advantage of never spoiling:

| | |
|---|---|
| Senna, in fine powder | 2 ounces. |
| Anise seed, in fine powder | ½ ounce. |
| Molasses, best quality | 16 ounces. |
| Tamarind pulp, purified | 4 ounces. |

This is a slight modification of the formula in the German Pharmacopœia, the only differences being, first, anise seed instead of coriander. I consider the anise seed to be a most agreeable aromatic. And second, molasses instead of simple syrup. If the latter is used it may after long standing ferment, while with the molasses it will never spoil.

NEW YORK, May 13, 1880.

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ARTIFICAL RESPIRATION.—The *Medical Press and Circular*, 1880, informs us that, in a recent communication to the French Academy, Professor Fort raises again the question of premature interments. One fact he mentions is, that he was enabled to restore to life a child three years old, by practicing artificial respiration on it four hours, commencing three hours and a half after apparent death. Another case was communicated to him by Dr. Fournol, of Billancourt, who, in July, 1878, reanimated a nearly drowned person after four hours of artificial respiration. This person had been in the water ten minutes, and the doctor arrived one hour after asphyxia. Professor Fort insists also on the utility of artificial respiration in cases of poisoning, in order to eliminate the poisons from the lungs and glands. The length of time it is desirable to practice artificial respiration in any case of apparent death from asphyxia Professor Fort has not yet determined, but his general conclusion is that it should be maintained perseveringly for several hours.—*Scientific American.*

## PREPARATION OF MONOBROMATED CAMPHOR.

C. C. Keller recommends the following simplified method in *Schweiz. Wochenschrift.* Three hundred parts of camphor are dissolved in one hundred and fifty to one hundred and eighty parts of chloroform, the solution is filtered into a capacious tubulated retort, and three hundred and twenty parts of pure bromine are added. After standing for several hours in the cold, if necessary, in ice water, the mixture is found converted into a magma of camphor dibromide, $C_{10}H_{16}OBr_2$, which separates in the shape of small crystals. The tubulure of the retort is closed with a cork, containing a safety tube, and the neck of the retort with a cork containing a rather wide glass tube bent at a right angle. The whole apparatus is now placed in a water bath, so that the neck of the retort points slantingly upward, and the glass tube dips into cold water in the receiver. Even at a gentle heat, the camphor dibromide splits into monobromide and hydrobromic acid. The latter escapes with frothing, hence the necessity of using a capacious retort. A little chloroform and bromine also distill over. After two or three hours' heating, the dark brown color of the contents in the retort has changed into a straw yellow. As soon as the evolution of hydrobromic acid ceases, the retort is removed from the water bath, and let stand for twenty-four hours in the cold, when the monobromide of camphor will have nearly all separated in the form of light yellow crystals. The mother-water is allowed to drain off from the crystals, and these are washed with a little absolute alcohol, till they appear of a clear white color. The crystals are now dissolved in as little ether as possible and again crystallized. Should the solution have an acid reaction, the crystals must be washed with a diluted solution of carbonate of soda and recrystallized. The yield from three hundred parts of camphor is about three hundred and forty parts of monobromide.

The mother-water and washings may be made to yield a little more crystals by evaporation; and the contents of the receiver, consisting of water, hydrobromic acid, bromine and chloroform, may be decolorized with sulphuretted hydrogen, and converted into some bromide or other, or the hydrobromic acid may be separated and used as such.—*The Druggists' Circular and Chemical Gazette.*

## COMMERCIAL WHITE LEAD.

Wigner and Harland have examined the different qualities found in the market, and their respective value as paint, and arrived at the following conclusions: A good white lead does not consist solely of carbonate of lead, but of a mixture of a neutral carbonate and hydrated oxide of lead in certain proportions. Hydrated oxide of lead alone mixed with linseed oil forms a kind of paint, or, rather, varnish, but it has no body. Carbonate of lead alone with oil forms a kind of emulsion, and has body, but no keeping quality; it dries with difficulty, and after a few days is easily washed off with water.

Hence, it is absolutely necessary to use a white lead not strictly pure, but consisting of a mixture of carbonate of lead and hydrated oxide. The best proportion has been found to be three equivalents of the carbonate with one equivalent of the hydrated oxide of lead.—*The Druggists' Circular and Chemical Gazette.*

**Uralium, a New Metal.**—As far back as 1869 the author discovered this metal in commercial platinum obtained from Russian ores. Next to silver it is the whitest metal known; its malleability is as great as that of the purest platinum, but its ductility is much greater, and it is almost as soft as lead. Its melting point lies near to that of platinum, and it is not volatile. Its specific gravity—20.25, and its molecular volume, like those of osmium, platinum and palladium, is 6.25. Its atomic weight has been found 187.25. In its chemical properties it is difficult to distinguish from platinum.—*A. Guyard.*

## WHAT CAUSES CARBOLIC ACID TO TURN RED.

Hager has been investigating the red color developed in carbolic acid, which nearly every one has observed, the peculiarity being that of one and the same lot one sample keeps clear as crystal and the other turns a deep red. From several indications, Hager says, in *Pharm. Centralh.*, that he believes the ammonia of the air to be concerned in the change. He therefore placed two samples in separate bottles, one of which he closed tightly, the other rather loosely, and left both under a bell jar, together with a lump of carbonate of ammonia. After a fortnight he found that the acid in the tightly closed bottle had kept perfectly clear, while the other, loosely stoppered, had separated into two layers, one of clear crystals and the remainder (about one-fourth) a dark-red liquid. By adding caustic soda, abundant evolution of gaseous ammonia took place. By varying the experiment, adding under the bell jar, besides the carbonate of ammonia, a small bottle containing mercury and nitric acid, Hager found that already on the third day the contents of the loosely stoppered bottle had changed color. Hence, the cause of the red coloration of carbolic acid is to be looked for in the nitrate of ammonia contained in the air, and the conclusion to be drawn is to keep the acid in tightly stoppered bottles.—*The Druggists' Circular and Chemical Gazette.*

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NITRO-GLYCERIN.—Condensed from *British Medical Journal:*

Few drugs have come more rapidly into favor than nitro-glycerin. A year or two ago nothing seemed more unlikely than that it should be used in medicine; but it now bids fair to rank high as a curative agent. It was discovered in 1847 by M. Sobrero, and its chemical properties have been fully investigated by Railton, De Vrij, De la Rue, and Müller, Mills, Dupre, Martindale, and others. It is slightly soluble in water and freely in alcohol and ether, and it has recently been found by Mr. Martindale to dissolve readily in fats and oils. It is, although slightly volatile, inodorous and has a sweet pungent aromatic taste.

It has been found that the effects of nitrite of amyl and nitroglycerin on the pulse are similar. Both produce a marked dicrotism and both accelerate the rapidity of the heart's action. They differ, however, in the time they respectively take to produce these effects. The full action of nitro-glycerin on the pulse is not observed until from two to six minutes after the dose has been taken; while in the case of nitrite of amyl the dicrotism appears in from fifteen to twenty seconds after an inhalation, but its effect is transitory, being maintained for only a very short time. The nitro-glycerin acts more slowly, but the pulse does not resume its normal character for nearly half an hour.

Dr. Murrell has shown from observations on a patient, the subject of epispadias, that nitro-glycerin is a powerful diuretic. On one occasion twenty minims of the one-per-cent. solution increased the amount of urine secreted in half an hour from fourteen and a half drachms to fifteen and a half ounces. This was the more remarkable as the patient was not at all susceptible to the action of the drug, and experienced none of the ordinary symptoms from the unusually large doses he had taken.—*Louisville Medical News.*

## CHLORIDE OF ZINC A REAGENT FOR ALKALOIDS.

A. Jorissen concluded that the characteristic colors which certain alkaloids produce when treated with concentrated acids depend upon a withdrawal of water, and was therefore led to see whether chloride of zinc, which is extremely hygroscopic, would produce the same results. This he found to be the case. The chloride of zinc must be chemically pure, particularly free from nitric or nitrous acids. It is prepared by letting pure hydrochloric acid act upon an excess of distilled zinc, filtering the solution through (purified) glass-wool, evaporating to dryness, and fusing the residue. One gram of this chloride is dissolved in a mixture of 30 c. c. of concentrated hydrochloric acid and 30 c. c. of water. A little of the solution of an alkaloid or its hydrochlorate is placed upon the inner side of a crucible cover and carefully evaporated to dryness on the water bath; two or three drops of the chloride of zinc solution is then added, and the cover gently warmed on the water bath. As the solution gradually evaporates, there appear at the margin of the still liquid portion certain colored rings, characteristic for particular alkaloids—provided they are present singly. Strychnine produces a bright rose-red, thebaine yellow, narceine olive-green, delphinine brown-red, berberine yellow, veratrine red, quinine pale-green, digitaline chestnut-brown, salicin reddish-violet, santonin bluish-violet, cubebin crimson.—*Chem. Zeit.*

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## NOTES AND ABSTRACTS FROM VARIOUS SOURCES.

PROPERTIES OF THE SULPHO-CARBOLATES.—From his studies of these agents [illegible] concludes that the sulpho-carbolates (1) are poisonous to cold-blooded animals; (2) are innocuous to warm-blooded animals; (3) that they are probably not antidotal to phenic poisoning, as it has been supposed they were.

CURARINE.—Th. Sachs asserts that curarine, as found in commerce, is not a pure alkaloid, but chiefly consists of phosphate of lime and a little carbonate of lime, with mere traces of curare. This explains the anomalous facts observed that an injection of curarine does not act as powerfully as an injection of less quantity of curare. In fact it scarcely has any effect.—*Druggists Circular and Chemical Gazette.*

TARTRATE OF MORPHIA.—The new preparation of neutral tartrate of morphia is a useful adjunct to our therapeutics. Being very soluble, it passes quickly out of the system, and gives less of the unpleasant after-effects than either the muriate or acetate. Its great solubility makes it particularly advantageous for subcutaneous injection. It gives little smarting or irritation when thus administered, and the solution never clogs the finest needles.—*Med. Press.*

ANOTHER DISCOVERER OF ANÆSTHESIA.—Anæsthesia will soon have as many discoverers as Homer had birthplaces. In addition to the four already known to fame—Morton, Jackson, Wells and Long—a fifth claimant now appears in the person of a Dr. Wilhite, still living in South Carolina, a student of Dr. Long, to whom he imparted a knowledge of the subject. It is said that Wilhite's friends intend to push his claim.—*Pacific Medical and Surgical Journal.*

A NIGHT LIGHT.—A simple way to produce an illuminating composition is thus described in *Industry:* Cleanse oyster shells by well washing, expose them to a red heat for half an hour, separate the cleanest parts, and put into a crucible in alternate layers with sulphur; now expose the vessel to a read heat for an hour at least. When cold break the mass, and separate the whitest parts for use. If inclosed in a bottle the figures of a watch may be distinguished by its aid. To renew the luminosity of the mass place the bottle each day in the sun, or in strong daylight; or burn a strip of magnesium wire close to the bottle. The sulphide of lime will thus absorb light, which will again be available at night time.—*Scientific American.*

AN IMPROVED NITRATE OF SILVER CAUSTIC.—Dr. Sawostizki called the attention of the Moscow Surgical Society [illegible] improvement in the preparation of sticks of nitrate of [illegible] melting together five parts of nitrate of silver with one part of nitrate of lead, forming an argentum plumbo-nitricum. Sticks formed of this are preferable to those of the ordinary nitrate, as they are not easily broken and can be pointed just like a lead pencil.—*St. Petersb. Med. Woch.*

DR. AUERBACH, writing to the *Chemiker-Zeitung*, mentions as a curious fact that during an entire summer he observed water beetles—probably *Gyrinus natator*—living in tanks of a saturated solution of Glauber salt. When alarmed the beetles took shelter under the crystals, just as they do in ordinary circumstances under water plants. A little of the liquid so harmless to insects, having found its way by leakage into an adjoining river, proved fatal to multitudes of fish.—*Scientific American.*

THE PROFITS OF DRUGGISTS.—One of the leading newspapers of the State, in discussing the question of percentages paid by druggists, says of a case in point, "if the actual cost of the drugs used in the prescription were known, it would probably appear that fifty cents would have covered everything, and that all the rest was clear profit—or sheer plunder." Now, we suppose the cost of setting up an advertisement of three lines in that newspaper would amount to about three cents, and yet one would have to pay a dollar for it. Would the editor regard the ninety-seven cents as sheer plunder? Newspaper men had better not talk about the profits of apothecaries.—*Pacific Medical Journal.*

PREPARATION OF BENZOIC ACID.—Prof. Rudolf von Wagner has devised an improvement over the old method of distilling the gum benzoin and driving out the acid by heat. He dissolves the benzoin resin in three or four pints strong acetic acid, decants the brown solution, and adds four parts boiling water. The resin separates upon dilution as a gray-brown mass, and is removed by filtering. When the filtrate cools, a large portion of the benzoic acid crystallizes out, while a second portion may be obtained by evaporating and partially neutralizing with lime. On a large scale, of course, the acetic acid could be recovered from the acetate of lime solution.

The resin that is precipitated from the acetic acid solution, when dried and fused, has a pleasant odor of storax, and may be employed to impart a pleasant odor to sealing wax, or for making fumigating sticks and [illegible]

The solubility of benzoin resin in acetic acid should give it other uses in perfumery, as in disinfecting smoking essences. Tolu and Peru balsams and storax are also soluble in acetic acid.

COATING FOR BLACK-BOARDS.—The following is recommended as yielding good results, though somewhat expensive:

| | |
|---|---|
| Shellac | 8 ounces. |
| Lamp-black | 12 drachms. |
| Blue ultramarine | 20 drachms. |
| Rotten stone, powdered | 4 ounces. |
| Pumice stone, powdered | 6 ounces. |
| Alcohol | 4 pints. |

Dissolve the shellac in the alcohol, add the other ingredients finely powdered, and shake well. The board to which the black is to be applied should be perfectly smooth and free from grease. The preparation should be well shaken before using, and applied rapidly with a flat varnish brush.

A cheaper preparation may be made as follows: Dilute silicate of soda with an equal bulk of water, and add sufficient lamp-black to color it. The lamp-black should be ground with water and a little of the silicate before being added to the rest of the liquid.—*The Druggists' Advertiser.*

PETROLEUM FOR COUGHS.—Dr. Moubre, writing to the *Gazette des Hopitaux*, gives his experience of petroleum capsules in simple and chronic bronchitis. This balsamic had been brought before the Therapeutic Society by Dr. Blache a year ago, at the suggestion of a Paris chemist, who named it Gabian oil, in order to prevent public prejudice. Each capsule contains twenty-five centigrams of pure petroleum, the ordinary oil not being used, as it has to be distilled in contact with sulphuric acid to render it fit for lighting purposes. At the Hopital Beaujon, where these capsules have been freely ordered for chronic bronchitis, a rapid diminution of the secretion and fits of coughing was observed. In tuberculosis this medicine gave encouraging results.—*Scientific American.*

EBONIZING WOOD.—The following is a recipe used by furniture manufacturers for the now popular style of ebonized wood:

| | |
|---|---|
| Logwood chips | 8 ounces. |
| Water | q. s. |
| Copperas | ½ ounce. |

Boil the logwood in one gallon of water for half an hour, and add the copperas. Apply to the wood hot, giving two or three coats. In varnishing ebonized wood, a little drop black must be added, or the varnish will give a brown shade.—*The Druggists' Advertiser.*

FARINA COLOGNE.—The following formula yields a cologne resembling the celebrated Farina Eau de Cologne known as the "Jülichs Platz" brand:

| | |
|---|---|
| Oil neroli, opt | 5 dr. 20 m. |
| Oil bergamot | 1 ounce. |
| Oil rosemary | 1 dr. 20 m. |
| Extract jasmin | 1 ounce. |
| Alcohol | 6 pints. |
| Water | 2 " |

The oils should be of the finest quality and the spirit pure. The mixture is slightly milky, but becomes quite clear when filtered, if a little powdered magnesia is added to the filter. For a cheaper cologne the above may be diluted to half the strength by adding a mixture of three parts of pure spirits to one of water.—*The Druggists' Advertiser.*

AUTOMATIC MOVEMENTS OF A FERN.—Dr. Asa Gray, in *Coulter's Gazette*, says: "Mr. E. J. Loomis, of the Nautical Almanac office, Washington, recently showed me a phenomenon which, I suppose, has never before been noticed, and which is commended to the attention of botanists. A tuft of *Asplenium trichomanes*, gathered last autumn in the mountains of Virginia, is growing in his house, in a glass dish. About two months ago he noticed that one of the fronds—a rather short and erect one, which is now showing fructification—made quick movements alternately back and forth, in the plane of the frond, through from 20° to 40°, whenever the vessel was brought from its shaded situation into sunlight or bright daylight. The movement was more extensive and rapid when the frond was younger. When I saw it on the 23d of January, its compass was within 15°, and was about as rapid as that of the leaflets of *Desmodium gyrans.* It was more rapid than the second hand of a watch, but with occasional stops in the course of each half vibration. This was in full daylight next a [illegible] not in sunshine. No movement had been observed in the other fronds, which were all sterile and reclining, with the exception of a single one which was just unfolding, in which Mr. Loomis thinks he has detected incipient motion of the same kind." This little fern is very common, and it is easy to obtain it and set it growing. The matter is worthy of further investigation.

MENTHOL: A NEW ANTISEPTIC.—Menthol, or peppermint camphor, is a crystallizable body deposited from Chinese oil of peppermint on exposure to cold. It is met with in the form of small colorless fragrant prismatic crystals, not unlike sulphate of magnesia. In fact, when first imported from Japan, some twenty years ago, it was for a time suspected to be nothing but Epsom salts flavored with peppermint. It is now known to have a definite chemical composition, and to be the camphor, or stearoptene of peppermint oil. It is but slightly soluble in water, although it imparts to it its characteristic smell and taste. It dissolves readily in alcohol and ether, and in oils, both fixed and volatile. It melts at about the temperature of the body, and when further heated volatilizes without decomposition. From a series of experiments recently undertaken by Mr. Archibald Duncan, a student of the University of Edinburgh, it would appear that it is possessed of antiseptic properties similar to those of its homologue, thymol. At present it can hardly be regarded as a commercial article; but it could be readily imported from Japan, and there is no reason to suppose that its price would be prohibitive. An impure sample sent over from Canton, in 1872, was valued at 30s. a pound. We are not aware that it has been used in therapeutics; but strong oil of peppermint painted over the part has long been a favorite mode of treatment in China for gout and neuralgia, and it might prove useful in these complaints. The Japanese "Po-ho-yo," or neuralgia remedy, probably contains menthol.—*London (Eng.) Lancet.*

## REPLY TO PROF. MAISCH.

*To the Editor of the American Journal of Pharmacy.*

In an editorial note on my article in the April number, relative to tests for arsenic, regret is expressed that I do not give the alleged authority for the solubility of antimony in hypochlorite of sodium. Not being able to recall the authority in [illegible] wrote to Mr. James, the attorney who conducted the cross-examination, and [illegible] quote from his letter in reply:

"The book I read from on that subject (the solubility of antimony in hypochlorite of sodium) was 'Wharton and Stille's Medical Jurisprudence,' vol. 2, paragraph 429, where it is stated that hypochlorite of sodium dissolves the arsenical spot, but that antimonial spots resist its effect, *unless they are small and of a dull appearance, when they will be dissolved.*"

This certainly brings the subject down to a fine point, and the cautious analyst will have to be sure that the arsenical spots are not "small and of a dull appearance," which in all cases is not possible. Hence, we believe that the hypochlorite of sodium is an unreliable test for the spots on porcelain. PHIL. HOGLAN.

NEWCOMERSTOWN, O., April 20, 1880.

## SIXTH DECENNIAL PHARMACOPŒIA CONVENTION.

The following are the names and residences of delegates thus far received by James E. Morgan, M. D.:

From the St. Louis College of Pharmacy: Messrs. F. W. Sennewald, Wm. H. Crawford, James H. Good.

From the University of the Michigan School of Pharmacy: Albert B. Prescott, M.D., Ann Arbor, Mich.; Henry B. Parsons, Phar. C., Agricultural Department, Washington, D. C.

From the College of Physicians, Philadelphia: Dr. W. S. W. Ruschenberger, Dr. Alfred Stille, Dr. I. Minis Hays.

From the Medical Department U. S. Army: Surgeon J. J. Woodward, Surgeon D. L. Huntingdon.

From the University of the City of New York, Medical Department: Prof. Wm. H. Thomsen, Prof. H. G. Piffard, Dr. A. H. Smith.

From the Department of Medicine and Surgery of the University of Michigan: Prof. Geo. A. Frothingham, M.D.; Prof. A. B. Palmer, M.D.

From the Chicago College of Pharmacy: Delegates—E. H. Sargent, H. D. Garrison, Geo. M. Hambright. Alternates—F. M. Goodman, Thos. Whitfield, Geo. Buck. The President of the College has the power to [illegible]ies in the delegation.

[illegible] College of Pharmacy: Edward S. Wayne, M.D., Phar. D.; J. F. Judge, M.D.; Adolphus Fennel.

From the Woman's Medical College of Pennsylvania: Clem. Marshall.

From the Medical College of Indiana, Medical Department of Butler University: Dr. Charles E. Wright.

From the Medical Society of the State of New York: Caleb Green, M.D.; J. D. Rushmore, M.D.; Wm. Manlius Smith, M.D.

From the College of Medicine, Syracuse University: Prof. Geo. R. Metcalf, M.D.

From the Medical Department of the U. S. Navy: Med. Inspector B. F. Gibbs.

From the U. S. Marine Hospital Service: Prof. Oscar Oldberg.

From the Miami Medical College, Cincinnati: Delegates—Prof. J. F. Judge, Prof. J. C. Mackenzie, Prof. Wm. B. Davis. Alternate—Prof. Wm. H. Mussey.

From the Massachusetts College of Pharmacy: Dr. Wm. P. Bolles.

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A NEW ANTHELMINTIC.—The Ocinum Baselicum, a plant known in Buenos Ayres under the name of Albochaca, has an action of such a nature that the worms in every stage of development rapidly leave their location after the juice reaches them. Its use is so much more to be recommended, since in the event no worms are present no injurious effect results from the plant, but a laxative and disinfectant action is the only result. Fifty grams of the juice are given, followed in two hours by a dose of castor oil. A free discharge of the worms may be expected. The above observations of Dr. Lemor and the results obtained are very encouraging, and invite further investigation, the more since the number of anthelmintics is limited, and their action often unsatisfactory.—*Medical Neuigk.*

# EDITORIAL.

## A SHORT SERMON TO DRUG CLERKS.

You are still young, and hope for many, perhaps fifty, additional years of life. To you this is a most important question: How will you spend your youth so as to best insure honor, wealth and happiness in your later years? Without doubt, you hope for respectability and wealth, and are laying your plans to secure them; but are your present plans rational and practical? Many reason thus: "My employer does not know very much, is not a graduate in pharmacy, or anything else, and yet he is a success. He owns this store, besides a large quantity of other property, and is regarded as a solid man in this town. If he did all this without any scientific education, I do not see the use in spending a lot of time and money in going to a College of Pharmacy." But, my young friend, the times and circumstances have changed since your employer began in business. There was little or no opposition then of any kind; now, opposition disputes advance at every step. Then, competitors, if they existed at all, were as ignornant as your venerable employer, and hence the fight in this respect was fair. Now, the case is far different. You will not have for competitors farmers, grocers, etc., transformed into drug *merchants*, but educated pharmacists. Will you, also, become educated, so as to meet them without disadvantage in the great battle for business? Will you strive to become not only the peers, but the superiors of your rivals, or will you adopt an opposite course? Would you, if armed but with a club, think it prudent to attack an opponent armed with a Spencer rifle and revolver? Knowledge is power, and capital, too, in our line of business. If you hope for success, you must be so well qualified as to command the confidence of physicians and the public, to as great an extent at least as can be done by any of your rivals. Without such qualification, it is really unwise to begin business and unsafe to invest money in it.

"But," answers our juvenile brother, "there is Smythe, who is a graduate of pharmacy, and who came with a big stock and a loud flourish of trumpets, and yet he now has hard work to keep soul and body together. How can you explain that by your theories?" Easily enough. We do not claim that education is everything essential to success, but that it is a *sine qua non*, a factor without which every other advantage will prove useless. Smythe had a big run at first, which showed that the people were not satisfied with the old druggists; but as he proved to be a churlish, intemperate rascal, his custom rapidly dwindled, and if you have either one of these qualities, education may make you better, but can never make a perfect gentleman of you. The pharmacist of the future must be a gentleman and a scholar.

"At some future time, when I get plenty of money, I intend to take a thorough course in a College of Pharmacy," replies our young friend; "but now it would take all that I can raise to do so." To state the case plainly, then, you intend to fight the battle, and then, if alive, buy good weapons. But even if your final success were assured, you would still be a great loser, financially, by such a procedure, for after graduation you can usually command from thirty-three to fifty per cent. advance in salary, and hence at the end of a very few years will have as much cash on hand as you could otherwise have accumulated, and in addition will have acquired your education. In other words, education very soon pays for itself. While young you learn easily, but when older you will find it more difficult to remember new names and theories, and besides will have become wedded, as it were, to errors in both theory and practice.

All are liable to make mistakes which, from the gravity of the results, may blight the future; but it is evident that the danger in this respect diminishes just in proportion as your knowledge increases. To assume the responsibilities, therefore, of a dispensing chemist, before you are reasonably well qualified at least, is to imperil your own future prospects, to say nothing of the lives of your confiding patrons.

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HOLMAN'S LIVER PAD has been found by several different observers to be a mixture of ground fenugreek seed, flaxseed and pitch, with a small amount of galbanum, or olibanum. Any other dirt would have done as well.

## DRUG STORE PRACTICE.

Since many people daily apply to pharmacists for relief from trifling ailments, which indeed a physician having any business and self-appreciation would not care to bother with, a few hints as to the best way to meet those requirements will not be amiss:

*Toothache* is often relieved by compound tincture of benzoin, a few drops being introduced by moistening a small wisp of [illegible] gently pressing it into the decayed tooth. Chloroform, tincture of opium, various essential oils, particularly cloves, solutions of morphia sulph. or carbolic acid, often subserve the same purpose if used in the same way, but not unfrequently utterly fail to give relief.

*A Dry Persistent Cough* may generally be relieved by acetic acid, properly diluted with simple syrup, say acetic acid, ʒii.; simp. syr., ℥iv. Mix. A little solution of caramel, or compound tincture of lavender, to make the mixture look stronger and more like medicine, will be very satisfactory to the patient.

*Gonorrhœa* is frequently very speedily cured by an injection of a very dilute solution of permanganate of potassium, say half a grain to four ounces of water, to be used freely three or four times daily. A solution of sulphate of zinc of the strength of two or three grains to four ounces of water is also very efficacious. Internal remedies do but little if any good; when demanded, however, by the patient, a weak mixture of balsam of copaiba, with simple syrup, and a little compound spirits of lavender to color the mixture, will prove as satisfactory and efficacious as anything.

*Diarrhœa* is usually self-curative, that is to say, when the offending, irritating materials which caused it are discharged it will cease. To facilitate this process a mild laxative of rhubarb or magnesia, followed by an aromatic cordial, will usually prove entirely sufficient.

*Cuts* of no great depth, and where no large blood vessels are opened, do not require any treatment, except cleansing and closing up by isinglass plaster. Anything put into the wound is a real damage to the case.

*Bruises* are probably benefited, and certainly not injured, by a lotion of equal parts of tincture of camphor and tincture of arnica.

***Burns and Scalds*** should be covered with cotton moistened with a mixture of linseed oil and lime water, about equal parts, or with old muslin or linen moistened with a very dilute solution of carbolic acid, or the cloths may be smeared over with cosmoline, or any of the other similar petroleum products.

***Pimples, Eruptions and Red Patches*** about the face or hands may often be cured by using milk of sulphur rubbed up with enough simple [illegible] which should be well rubbed in every second evening.

*For Sore Eyes*, a collyrium, or eye water, containing half a grain each of sulphate of zinc and muriate of berberina (often called "muriate of hydrastia," or simply "hydrastin") to each ounce of water, will be found frequently very efficacious.

*Sore Mouth* is generally cured by chewing a small crystal of chlorate of potassa, or a little golden seal root. These agents might well be combined in a lozenge.

All cases of importance, and indeed all of the foregoing, when severe or obstinate, should be referred to a physician. As the pharmacist receives no pay, but for his goods, he should refuse to assume more than the slightest responsibility in any case, even if he is thoroughly competent to manage it. We do not advise pharmacists to treat the cases we have mentioned, if they can avoid it; but if they must suggest something, these simple measures are far preferable to the recipes usually resorted to for the same purposes and will be found to be equally as profitable.

## CLERICAL "DOCTORS."

We are well aware that the term Doctor is derived from *docere*, to teach, and that in its primitive significance it is even less applicable to medical men than to clergymen. But since these two functions, preaching and healing, were in olden times mostly represented in the same person, it came to pass that, as a division of labor arose, the title "doctor" was applied to the healer, who is seldom known by any other title, while "father," "reverend," etc., became the distinguishing titles of clergymen. Nowadays, however, every little preacher is styled "doctor," and the more insignificant the man the more prominent is the handle, "doctor." If the *law* of *usage* is to be set aside, and the title is to be applied wherever it is applicable on philological grounds, then we should refer to our school teachers as "Dr. John Jones," "Dr. Jennie Scott," etc., and particularly we should style the greatest of all religious teachers, as Jesus, Mohammed and Buddha, "doctors." How would it sound to quote from "Dr. Peter," or "Dr. Paul?" Some pharmacists and not a few dentists parade the title "doctor." Our advice to all is, to make the profession of which you are a member so honorable that your proper title shall be your most flattering appellation.

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## CHICAGO COLLEGE OF PHARMACY.

The announcement of this institution will be found among our advertising pages. The next term of lectures will begin October 4th and continue until February 26th.

The College building is large, handsome, conveniently arranged and very centrally located. The Professors are men of recognized ability in their several departments and are experienced teachers. Altogether, the student of Pharmacy cannot do better in this country than at this College.

In some respects the advantages here are much better than in cities of less size. We have about four hundred retail drug stores, and hence, if only one-fourth of the proprietors accept students of Pharmacy as assistants, one hundred students can be accommodated with situations. Frequently, however, druggists who know the value of these young men take two such assistants. While the student cannot expect much pay for his services between the lectures, he will still be certain of enough to pay his board, and in some cases considerably more.

Those who have ample means and who have had sufficient experience in dispensing will find abundant opportunities here for entertainment and instruction during the spare hours. The Athenæum, Public Library, various literary and medical colleges are open to them, either free or at small expense; besides, scientific lectures, both technical and popular, are of daily occurrence. The health of the city is excellent, and the water, being clear, cold and pure, is quite a luxury. This city being the greatest provision mart in the world, *board is always cheap*, as compared with other large cities.

## ITEMS OF INTEREST.

**Ernst Matthei**, a very reputable druggist of this city, has been sued for $20,000 damages, for suggesting to a young lady a face beautifier, which on trial proved to be very caustic, causing extensive sores and sloughing of the skin, resulting in permanent disfigurement.

**The** Analyst of the Health Office has been examining the various [illegible] in this market. He found a few samples to be rather weak, and one which contained traces of copper, and another a trace of free hydrochloric acid. Upon the whole, he concludes that there is little cause for complaint in this matter.

**The** professional robber of wholesale drug stores, Simonds, *alias* Andy Smith, who burglarized Fuller & Fuller, and Lord, Stoughtenburgh & Co., of this city, to the tune of about $1,500 in each case, was recently caught in the act of going through the store of Meyer Brothers, of St. Louis. The fellow knew just what to steal, and hence always went for the quinine, morphine, etc. Our firms have recovered most of their goods from parties to whom they had been sold by the thief.

**Plym S. Hayes**, M. D., a former pupil of Prof. J. V. Z. Blaney, has been appointed Instructor of Analytical Chemistry in the Chicago College of Pharmacy, to fill the vacancy created by the death of Prof. James Blaney. During the last term, after the death of Prof. Blaney, this department was conducted by Prof. H. D. Garrison, whose other duties were too onerous, however, to permit him to attend to this longer than was necessary to secure the services of a desirable incumbent.

## MEDICAL LEGISLATION.

A bill is before the New York Legislature, with, it is said, a fair prospect of becoming a law, making it unlawful for any medical society, State or local, to punish any of its members by censure, expulsion, or otherwise, for consulting with or assisting any physician of a different school of practice.

The attempt of the Kentucky physicians to have their bills placed on the preferred list of claims was defeated by great odds.

## REVIEW OF CHICAGO DRUG MARKET.

Trade continues fair, although not quite as active as at the date of our last issue. The tendency of prices is downward, but as on many articles the level of the market previous to the large advance of last season has been reached, a reaction is confidently expected. Our subjoined quotations represent the present condition of the market.

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| Acid, Nitric | lb. | 12 @ 14 | Arnica Flowers | lb. | 18 @ 20 |
| " Tartaric | " | 58 @ 60 | Assafœtida | " | 23 @ 25 |
| Aloes | " | 17 @ 50 | Balsam Copaiba | " | 80 @ 85 |
| Amm., Carbonate | " | 22 @ 25 | " Tolu | " | 80 @ 85 |
| " Muriate | " | 14 @ 16 | Bees-wax | " | 30 @ 33 |
| Bleaching Powder | " | 4 @ 5 | Oil Bergamot | " | 3.25 @ 3.50 |
| Blue Vitriol | " | 11 @ 12 | " Cassia | " | 1.50 @ 1.60 |
| Borax | " | 12½ @ 13 | " Castor | gll. | 80 @ 90 |
| Camphor | " | 30 @ 35 | " Lemon | lb. | 3.50 @ 3.75 |
| Cantharides | " | 1.35 @ 1.50 | " Olive | gll. | 80 @ 3.50 |
| Cassia | " | 25 @ 30 | " Pennyroyal | lb. | 1.25 @ 1.30 |
| Castile Soap | " | 8½ @ 18 | " Peppermint | " | 3.50 @ 3.75 |
| Chamomile Flowers | " | 35 @ 40 | " Sperm (pure) | gll. | 1.40 @ 1.60 |
| Cinchonidia, oz. bots. | oz. | 1.00 | " Wintergreen | lb. | 3.50 @ 3.75 |
| Cloves | lb. | 43 @ 45 | " Roses | oz. | 5.00 @ 8.00 |
| Cream Tartar (pure) | " | 40 | Opium | lb. | 6.75 @ 7.00 |
| Cubebs | " | 20 @ 22 | Pepper, Cayenne | " | 25 @ 28 |
| Cuttle Fish Bone | " | 22 @ 25 | Potass., Bromide | " | 40 @ 45 |
| Ergot | " | 75 @ 85 | " Chlorate | " | 22 @ 25 |
| Ginger, Afr | " | 10 @ 15 | " Iodide | " | 4.60 @ 4.75 |
| " Jam | " | 25 @ 30 | Quicksilver | " | 55 @ 60 |
| Glycerin | " | 18½ @ 85 | Quinine, P. & W., 1 oz. btls. | | 2.85 |
| Insect Po | " | 65 @ 75 | Salicin, 1 oz. vials | oz. | 45 @ 50 |
| Iodine, Resub | " | 6.50 @ 6.75 | Santonin, 1 oz. vials | " | 85 @ 90 |
| Ipecacuanha Po | " | 1.65 | Seed, Canary | lb. | 4 @ 5 |
| | | | " Hemp | " | 4 @ 5 |
| MERCURIALS— | | | Senna | " | 18 @ 25 |
| Blue Pill | " | 50 | Seneka Root | " | 75 @ 80 |
| Calomel | " | 68 @ 70 | Shellac | " | 40 @ 48 |
| Corrosive Sub | " | 58 @ 60 | Soda, Bicarb | " | 4 @ 6 |
| Mercurial Oint | " | 50 @ 55 | " Sal | " | 1¾ @ 3 |
| Red Precipitate | " | 78 @ 80 | Squills | " | 14 @ 16 |
| Morphia Sul. P. & W. ⅛ oz. | | 4.50 @ 4.75 | Sugar, Lead, white | " | 18 @ 20 |
| Nutmegs | lb. | 1.10 | Tonqua Beans, Angostura | " | 2.50 |
| Oil, Anise | " | 2.25 @ 2.50 | | | |

# THE PHARMACIST.

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## A CORRECTION.

In my communication in the April number of THE PHARMACIST, entitled "A Poisoning Case With Lessons," I gave it as my opinion that the arsenic found by Prof. Howard was an impurity in the subnitrate of bismuth administered to the patient some time before death. The Professor has called my attention to the fact that he testified in court that the bismuth, when subjected to the most rigid test, failed to give evidence of the least trace of arsenic, and in examining the record we find such is the case, and I now recollect this fact, although at the time I wrote the article in question it had entirely escaped my mind. In justice to Professor Howard, who made the analysis, it is due him for me to modify my opinion on that point, and I gladly do so by stating that I believe that if he made such analysis of the bismuth and failed to detect arsenic I cannot but conclude that the bismuth was free from the poisonous metal, as I have implicit faith in Professor Howard's ability as a toxicologist and chemist.

PHIL. HOGLAN.

NEWCOMERSTOWN, OHIO, May 24, 1880.

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GRANDVIEW, IND., June 14, 1880.

DEAR PHARMACIST: I have carefully read "The draft of a proposed law to regulate the practice of Pharmacy in the State of Illinois." I imagine I see one very *weak* place in that proposed law. In the third paragraph of section eight I find the following: "Provided, however, that in rural districts, where there is no registered pharmacist within two miles," etc., etc. This provision makes it possible to have whisky shops, called drug stores, scattered throughout the "rural" districts of your whole State for the purpose of dispensing whisky for *medicinal purposes*, and other medicines of less importance.

In "rural" districts physicians usually carry their medicines with them, and keep a stock on hand for their own convenience and that of their customers. Would it not be better to leave the drug business in country localities to country practitioners of medicine? Would they not, upon the whole, be entirely the safest druggists for "rural" districts?

Dunglison tells us that the surgeon-apothecary "is the ordinary medical man, or family medical attendant, in England."

Would it not be wise to encourage that class of medical men in this country? Could not this class of medical men make themselves far more useful to country people than the mere manufacturing chemist? Drug store practice is a very important item in village drug stores. A druggist who can successfully treat the colic in such stores is far more useful to the people than the man who can go out and analyze botanically all the herbs and plants of his neighborhood.

Respectfully, GEORGE WORSLEY.

## THE PRESCRIPTION QUESTION—PHARMACIST *vs.* PHYSICIAN.

There seems to exist at the present time, amongst the physicians of this country, a certain amount of excitement regarding the indiscriminate repetition of prescriptions by the pharmacists. They claim that the pharmacist, by compounding a physician's prescription an unlimited number of times, without a written order from the practitioner, robs the latter of his just fees and compensation for medical advice and skill. In their endeavor to correct this assumed injustice done them, some physicians have clubbed together and have threatened all obstreperous druggists with their supreme ire; while others again, and apparently the younger ones in the profession, try their luck, and test their pharmaceutical skill, by distributing a miniature drug store about their coat pockets and dosing their patients themselves. Now, since every medallion has two faces, so there are two sides to this question, which let us examine.

When, in times long gone by, the art of healing first sprang into existence, and became specialized as a new and distinct branch of man's vocations, then the man understanding disease and the properties of certain natural products was also the man who collected those remedial agents and prepared them according to his necessities; or, in other words, the doctor and the apothecary were one and the same person. This was entirely satisfactory when medical knowledge was confined to extremely narrow limits, and when the healing agents employed were such plants and perhaps animal and mineral substances as could be readily obtained in the immediate vicinity. Gradually, however, the scope of the science enlarged. On the one hand the accumulating facts concerning diseases of the body and their treatment soon occupied the entire attention of the practitioner, while on the other, through the influence of trade and travel, the materia medica became greatly enriched, and the manufacture of the Galenical as well as chemical preparations grew more intricate from year to year. At last, practice of medicine separated into two branches, in conformity with the law of the division of labor, the art of prescribing and the art of dispensing. Then, as has been demonstrated over and over again, no one of these professions is the superior of the other, but they are equal, sister and sister, sprung from the same parental stock, both dependent on each other, neither capable of existence nor at least of progress without the other. The science and art of pharmacy are for naught if deserted by the medical profession; while therapy, again, must claim a helping hand from its sister science.

Now, to look at the "prescription" in particular. What is it? Much has been written concerning the proprietorship of physicians' prescriptions, some writers claiming them for the originator, others for the dispenser, and lastly others, but those by no means least in number, for the patient. Now, what is the truth? In Germany (as to other countries I know not) the prescription, as soon as the medicine is paid for, belongs to the patient by right of law. In the United States the pharmacist retains the same as his only protection, ofttimes against the will of the customer; but he repeats it *ad libitum*, against the physician's will, under the sanction, however, of custom. Now, before any great animosity shall arise between the two professions over this mooted question, a way ought to be found out of the dilemma. Let us first answer the above question—what is a prescription?

A sick person consults the physician about his disease. The doctor answers: "I know what ails you, and for a certain consideration I will give you medicines that will effect a cure." Very well! But presently the doctor finds it impracticable to dispense his medicines, for various pertinent reasons, therefore he engages an assistant, whom he tells what to prepare and how to do it. This is the second, and now comes the third part of the metamorphosis. The doctor being frequently called away from his office, it becomes impossible for him to personally direct the compounding of his remedies, he is compelled to give written instructions to his famulus, and the latter, having meantime acquired more skill of manipulation and a more thorough knowledge of drugs and chemicals than his master, finally proposes a perfect separation of their individual interests. Looking at it in this light, it clearly appears that the physician has an absolute right to his prescriptions, they being merely written directions to men versed in the compounding of medicines, he himself not finding it convenient to prepare the mixture; and inasmuch as nó one could compel the medical attendant to divulge the composition of his remedy, just so little claim has the patient to the prescription when once compounded. The sick person does not pay the doctor for the prescription *per se*, but for his advice. The doctor might give the apothecary verbal instructions, the latter might write those down in order not to forget, and, the medicine being put up, cast away that slip of paper. This he might properly do with all regular prescriptions, were it not that he must protect the prescriber against attacks from the public, and chiefly himself against false accusations liable to be made by the doctors.* Therefore the pharmacist properly becomes the custodian of physicians' prescriptions, which, logically, he has no right to repeat without authority, nor of which may he furnish a copy to the patient. Custom, however, decrees differently, and the apothecary, being not only a professional, but also a mercantile man, cannot readily oppose public opinion, assuredly not as long as he does not enjoy governmental protection. There seems to be, however, a remedy for the complaint; it is very simple, and the object of this communication is to bring it to the general attention of our Western practitioners and to ask them to give the same a fair trial:

Write or print on your prescription paper: "Do not repeat!" and "Furnish no copy!"

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* Only a few weeks ago a graduate of one of our medical colleges maliciously pronounced a preparation made at the writer's pharmacy as worthless, simply to send trade to his favorite drug store.

But few respectable pharmacists would disregard such a request when made good-naturedly and in black and white, while, on the other hand, they would scorn to heed if any clique should proclaim its determination to crush out of existence any druggist who would fail to desist from certain things.

Those practitioners in larger towns who will insist on dispensing their own remedies, in order to increase their revenues by forcing people to come again, must not forget that they are struggling against the tide of progress, and they will probably learn to their dismay, sooner or later, that they cannot turn back its flow, while they themselves will be rated with the Indian doctors, water doctors, root and herb doctors, and all of that ilk. And who can blame an intelligent public? In justification of this practice we often hear it asserted that physicians must do it in self-protection, owing to the deprecable habit of druggists to "prescribe over the counter." There undeniably is some truth in this accusation, but the matter is not so serious as generally implied. As a rule, people are really prescribing for themselves, as they will ask the apothecary for a purgative, a cholagogue, an expectorant, a sedative, etc.; or, they will say: "Give me something good for the toothache," or something to that effect; but in nine cases out of ten the physician loses nothing, for those very same parties would not pay the consultation fee even if not accommodated by the druggist; they would either find a more willing, but perhaps less competent, helper on the next corner, or try some household remedy advised by some kind neighbor. For we know well that in this country everybody is a natural born doctor, and that any layman understands as much about medicines as all the professors of the medical colleges—and more too! Any one at all conversant with the business of a retail drug store must unhesitatingly admit that a certain percentage of prescribing for the masses is absolutely unavoidable, and cannot be eradicated by even stringent pharmacy laws, as witness England, Germany, and other countries, not to speak of the injustice or even cruelty done people of slender means, barely able to purchase a simple drug recommended by the apothecary, were they compelled to fee a physician for advice.

ADOLF G. VOGELER, Ph. G.

CHICAGO, April, 1880.—*Chicago Medical Gazette.*

# PREPARATIONS OF FUCUS VESICULOSUS.

BY E. B. SHUTTLEWORTH.

Several formulas have been proposed for solid and fluid extracts of fucus vesiculosus, but some of the more recent are open to certain objections which the originators appear to have overlooked. For a solid extract, the directions of Mr. Dannecy, which were published as long ago as 1862, may be followed with advantage, and furnish a preparation which has been found to be therapeutically beneficial. Later observers have, however, found the best results to follow the use of both the solid and fluid extracts. This may possibly be accounted for by the fact that solid extracts are made with a strong alcoholic menstruum, and fluid extracts with a spirit much weaker. By using both preparations the patient gets the benefit of whatever may be dissolved by an alcoholic as well as a hydro-alcoholic menstruum.

So long as our knowledge of the fat-reducing principle of bladder-wrack is uncertain, it is probably just as well to use both preparations. Analyses of fucus have frequently been made, but it has been principally for the sake of ascertaining the inorganic constituents that they have been undertaken, and it is possible that the specific effects of the remedy are not entirely due to these, but are to be attributed to some peculiar organic body, which has not yet been isolated.

A good deal of the uncertainty of the effects of the extracts may perhaps be traceable to the employment of other species of fucus than that indicated. *Fucus nodosus* is frequently sold for *vesiculosus*, and mixtures of both kinds may be found in the drug as supplied on this continent. Other species of fucus may be equally good, but it has not been shown that this is the case, and the vesiculosus—which may be known by the double row of vesicles—should be alone employed.

The solid extract, prepared by exhausting with proof spirit, as recommended by Mr. J. R. James, will yield an extract which, when formed into pills, will "fall," that is, after a time the pills will flatten out and lose their shape. A still more unmanageable mass is that produced by using the menstruum of two parts of proof spirit and one part of water, directed by Mr. M. Conroy, F. C. S.

When we consider the deliquescent salts—especially sodium chloride—which are present in bladder-wrack, the cause of this is at once apparent, and the use of a stronger menstruum is indicated. I may mention incidentally that the yield of extract with proof spirit as a menstruum will be about sixteen per cent.

The most suitable menstruum I have found is alcohol of 45 over proof. Pills made with this retain their form well, and, from all reports which I have been able to collect, answer well therapeutically. The yield will be about 7½ per cent. of the air-dried fucus.

For fluid extract a spirit of proof strength may be used. If weaker than this, mucilaginous matters will be extracted, which render the extract more than necessarily repugnant to the taste.

As the weed is taken from salt water it is covered with a deposit of sodium chloride, that may be got rid of by washing quickly in cold fresh water, and tying in bundles, or spreading on a cloth, and exposing to a gentle heat, by which it may be speedily brought into a fit condition for grinding.—*Canadian Pharmaceutical Journal.*

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## DUBOISIA.*

Duboisia myoporoides belongs to the family of the solanaceæ. It is an alkaloid, and is not officinal, but corresponds closely to atropia in its physiological action. It is freely soluble in water. It is generally employed in the form of an extract, or in the shape of salts of the active principle.

The dose of the alkaloid is from the 1-120 to the 1-60 of a grain. The dose of the extract is from one-quarter of a grain to one grain.

The alkaloid possesses the medicinal properties and powers of the plant, ,and combines with acids to form salts.

Duboisia is incompatible with caustic alkalies, and should therefore never be combined with them in prescriptions. Like atropia, it finds physiological antagonists in physostigmine and muscarine and to a limited extent in opium. It antagonizes pilocarpine in its most conspicuous properties.

In poisoning by this drug the proper treatment consists in the use of emetics and the stomach pump. Its systematic effects are then to be overcome by the hypodermic injection of physostigmine; muscarine, morphia and pilocarpine may also be employed with caution.

*A Lecture Delivered at Jefferson Medical College by Roberts Bartholow, M. D.

The synergists of duboisia are belladonna, stramonium and hyoscyamus. Although the physiological action of atropia and duboisia are, as above stated, exceedingly alike, it is well to note the following points of difference, viz.: (1) Duboisia is fully twice as soluable in water as atropia; (2) it is a stronger base; (3) its reaction to sulphuric acid and bichromate of potassium is different from that of atropia; (4) it is less irritating to the conjunctiva, dilates the pupil more rapidly, and the patient recovers earlier from its effects.

As physiological effects it produces dryness of the mouth and tongue, with thirst and more or less difficulty in swollowing. The dryness of the larynx is very likely to affect the voice. The stomach and intestines are affected in the same way by duboisia as by atropia. So, too, with regard to the heart. The pulse is very soon accelerated and the arterial tension increased. The face becomes flushed, the pupils grow large and accommodation is sooner or later paralyzed. Other symptoms of its action are frontal headache, tinnitus aurium, giddiness, and restlessness during sleep.

The alkaloid diffuses rapidly into the blood and affects the nervous system, giving rise to uncertain gait and a general awkwardness in locomotion. Sometimes there is complete muscular paresis. In animals mental excitement and an approach to delirium have occasionally followed the use of the drug, and frogs poisoned by duboisia show tetanic symptoms after the lapse of several days.

My experience, founded on physiological experiments, has been that the acceleration of pulse and rise in arterial tension do not persist, but fall after the lapse of some hours, the excitement subsiding and giving place to a stupor which seems to favor sleep.

Some patients are affected very unpleasantly by the use of duboisia, vertigo and other unpleasant symptoms being complained of. These are, no doubt, purely subjective symptoms.

As regards the therapeutical application of duboisia, its use thus far has been principally as a mydriatic. Upon one occasion I have prescribed it in a case of puerperal mania with great excitement, and have had the maniacal excitement increase for a short period after its administration, and then give rise to a condition of mental calm. The improvement was rapid following the use of the drug.

In diseases of the eye, duboisia is in general preferable to atropia, owing to the greater rapidity of its action in affecting the dilatation of the pupil and in giving rise to paralysis of accommodation. The refraction of the eye can be determined much better by means of duboisia than atropia.

Duboisia is, I think, destined to take the place of atropia as a remedy for the night sweats of phthisis, and for the various nervous affections of the organs of respiration. It will also prove a valuable cardiac stimulant. It is superior to atropia as an hypnotic and anodyne. —*Therapeutic Gazette.*

## THE POISON BILL.

The following is the text of the poison law enacted at the last session of the Legislature of Kentucky:

SECTION 1. *Be it enacted by the General Assembly of the Commonwealth of Kentucky*, It shall be unlawful for any person to sell, either by wholesale or retail, any poison without distinctly labeling the bottle, box, or paper, and wrapper or cover in which said poison is contained, with the name of the article, the word poison, and the name and place of business of the seller.

SEC. 2. It shall likewise be unlawful for any person to sell any poison without being satisfied that the buyer has attained his lawful majority, and that the poison is purchased for legitimate use.

SEC. 3. It shall be the duty of every person selling a poison at retail, before delivering the same to the buyer, to make, or cause to be made, an entry in a book kept for that purpose only, stating in the form set forth in schedule A, annexed to this act, the date of sale, the name and address of the purchaser, the name and quantity of the article sold, and the purpose for which it is stated by the purchaser to be required; and such book is to be preserved for at least five years after the date of the last entry, and is to be always open to the inspection of the coroner and the officers of the different courts.

SEC. 4. *Be it provided*, That no articles shall be considered a poison within the meaning of this act, unless such article be enumerated in schedule B, annexed to this act, or shall hereafter be declared a poison by law.

SEC. 5. *Be it also provided*, That nothing hereintofore contained shall apply to, or in any manner whatever interfere with the compounding and dispensing of medicines and poisons upon the prescription of medical practitioners.

SEC. 6. Any person who shall violate any of the provisions of this act shall be sentenced, upon conviction, to pay a fine of not less than five dollars nor more than one hundred dollars for each offense.

SEC. 7. This act shall take effect from and after its passage.

### SCHEDULE A.

Form in which dealers in poison shall keep their poison book :

| Date. | Name of purchaser. | Name and quantity of poison sold. | For what purpose said to be required. | Remarks. |
|---|---|---|---|---|

### SCHEDULE B.

The following articles shall be considered poisons within the meaning of the "Act to regulate the sale of poisons:"

Aconite, root and leaves, and the following products and preparations made from them: Aconitia and its salts, extract, fluid extract, tincture.

Arsenic, and the following compounds and preparations: Arsenic acid and its salts, arsenious acid and its salts, arsenic iodide, Donovan's solution, Fowler's solution‸hydrochloric solution of arsenic, solution of arsenite of sodium, Paris green.

Belladonna, root and leaves, and the following products and preparations made from them: Atropia and its salts, extract, fluid extract, tincture.

Cannabis Indica, and the following preparations made from it: Extract, fluid extract, tincture.

Cantharides and the tincture.

Cotton root and root bark, and all of its preparations.

Croton oil.

Cyanide of potassium.

Digitalis, and the following products and preparations made from it: Digitalis, extract, fluid extract, tincture.

Ergot, and all of its preparations.

Fish-berries, and all of its preparations.

Hydrocyanic acid.

Mercuric ammonia chloride (white precipitate).

Mercuric chloride (corrosive sublimate).

Mercuric iodide (red iodide of mercury).

Mercuric nitrate (salt and its solutions).

Mercuric oxide (red and yellow precipitate).

Nux vomica, and the following products and preparations made from it: Brucia and its salts; extract, fluid extracts, tincture, strychnia and its salts.

Opium, and the following products and preparations made from it: Morphia and its salts; tincture (laudanum and deodorized), acetic, tincture, wine, vinegar, extract, Battly's sedative, solution of bi-meconate of morphia, solution of morphia.

Savine, and the fluid extract.

Veratria.

Veratrum viride and veratrum album, and the following preparations made from them: Fluid extract, extract, tincture.

Volatile oil of bitter almonds.

Volatile oil of pennyroyal.

Volatile oil of savine.

Volatile oil of tansy.

Proprietary or secret medicines recommended, sold or advertised as emmenagogues or parturients; and all such as are known or advertised to contain a large proportion of opium or other powerful narcotic.

## AN EASY TEST FOR ALOES IN BEVERAGES.

Hugo Borntraeger has found a reliable process to detect aloes in elixirs, liquors, beer, and other liquids. On thoroughly shaking a cold prepared alcoholic tincture of aloes with ether, or better, with benzine, the latter assumes a yellowish-green color. If now a few drops of ammonia are added to the decanted clear benzine solution, the ammonia assumes a fine violet-red color. Instead of ammonia, caustic potassa, soda, lime-water, etc., may be used, but the color is most intense when using concentrated ammonia. Addition of an acid destroys the red color, but on supersaturating the acid it reappears again. This reaction permits the detection of 1 part of aloes in 5,000 parts of liquid, provided the benzine be shaken with the latter briskly for about five minutes. The test is performed by shaking a sample of the liquid suspected to contain aloes with twice its volume of benzine, and then adding some drops of strong ammonia. If no red color makes its appearance, aloes are either entirely absent, or may be present in such minute quantity that it may be entirely disregarded. If aloes has been detected, the original liquid will yield a more or less abundant precipitate with ferric chloride, since aloes, according to Czumpelik, contains considerable quantities of a tannin-like body. Of course, the presence of other substances containing tannin would make the latter test fallacious.—*From Zeitsch. f. Anal. Chem.*

## HOW TO USE IODOFORM IN CHANCROID.

Unquestionably the most efficient local application for these chancroids is iodoform, and its application pure, in powder or mixed into a paste with glycerin, and scented with essential oils, is rarely painful. But respectable people will not use iodoform. Its peculiarly penetrating and tenacious odor is unmistakable. Those who have once smelled it upon any one else fear disclosure from the very fact of using it, and most of those who are unfamiliar with it at first soon get to abhor it. In spite of all this it remains the most efficient local application for chancroids too old to burn, and by a careful person can be often so used as to escape all the disadvantage attaching to it.

Nothing will disguise the odor of iodoform. Oil of peppermint is perhaps the best of the aromatic oils for the purpose. Many other sweet-smelling oils have been used. These are combined with powdered iodoform in ointment with various greasy excipients, or the powder is rubbed into a paste with glycerin and then scented. The misfortune is that the odoriferous principle is more volatile than the iodoform, and, aided by the heat of the body, soon leaves the odor of the iodoform supreme. Applications of iodoform dissolved in ether or chloroform have been recommended. Their application is painful, the solvent evaporates, and the odor exhales as strongly from the fine dust left precipitated over the surface of the ulcer as if it had been at first deposited there in its natural state.

Still iodoform is too good a substance to be given up. Those who do not object to the odor can use it freely as a powder or rubbed into a paste with glycerin. Others may use it undetected if their chancroids are sub-preputial, and the prepuce reasonably long. The sores must be washed and dried. A little fine iodoform dust is then taken upon a narrow piece of card and scattered over the ulcerated surfaces. The prepuce must now be carefully pulled forward and a piece of absorbent cotton placed in its orifice. No portion of the iodoform must be allowed contact with the clothes or the fingers of the patient. He must be careful, upon urinating, to pull out the cotton gently, retract the prepuce only enough to disclose the meatus, and put in a fresh piece of cotton immediately. He must change his dressing frequently at home, and use great care in his washings, not to let the water which has run over the sores touch any part of his person or of his clothing. By using such precautions the most fastidious patient may employ this valuable remedy without betraying himself.—*Keyes's Venereal Diseases.*

## KOUMYSS.

A presentation of twelve volumes from Robert Shoemaker to the library of the Philadelphia College of Pharmacy was announced at the regular pharmaceutical meeting of that institution, held May 18. A paper from Mr. Truckenmiller, in reply to an inquiry at a former meeting about *Koumyss*, or milk wine, was read. The writer expatiated at length on the merits of this preparation, and quoted the experience of others. He gives the following formula, which, he says, has proved satisfactory:

| | |
|---|---|
| Take of good cows' milk | 1 gallon. |
| Sugar | 4 ounces. |
| Yeast, sufficient. | |

Dissolve the sugar in the milk, and bottle the solution in champagne quarts; to each bottle add two ounces of yeast, and set aside in a warm place until fermentation is well under way; then lay on the side in a cool cellar. It will be ready in from three to four days.

The discussion continuing on koumyss, Mr. L. Wolff, a well-known pharmaceutist, of Philadelphia, submitted a bottle with syphon attachment, so that the meeting could examine his product, and read an excellent paper on the subject. The original source of preparation, he said, is Tartary and the Steppes of Asiatic Russia, where it is used as a drink. He referred to the different articles which have appeared in pharmaceutical journals since 1874, and related his own experience. At one time he used a ferment imported at considerable expense from Russia. He remarked that the mares' milk used by the Tartars contains eighty parts of sugar in a thousand, while cows' milk has only forty; but for druggists' use he offered the following, which produces an article similar to the sample examined by the meeting and pronounced very acceptable:

Take of grape sugar half an ounce, dissolve it in four ounces of water, and about two ounces of milk, and mix it with twenty grains of Fleischman's yeast, obtainable in Philadelphia and elsewhere at almost any grocery store, otherwise well washed and pressed brewer's yeast may be substituted; mix the two in a champagne bottle, which is to be filled with good cows' milk to within two inches of the top. Cork it well, securing the stopper with wire or cord; place the bottle in a cellar or ice chest where the temperature is 50° or less, and agitate it three times daily. At the expiration of three or four days the koumyss is ready for use. It should be consumed within four or five days, although the specimen shown was seven days old.—*Druggists' Circular and Chemical Gazette.*

## DETECTION OF ALCOHOL IN ESSENTIAL OILS.

Mr. Ernest Barbier, of Nancy, in a paper presented to the Societe de Pharmacie de Meurthe-et-Moselle, reported the results of his examinations of some lots of oil of bergamot and oil of lemon received from Southern France, and detailed his method for detecting and separating alcohol from essential oils. His process is as follows:

The suspected essential oil is distilled on the sand bath, until about one-tenth of the whole quantity has passed over into the receiver. This portion contains the alcohol, if any is present. In the case of oil of bergamot, which was one of the objects of his assay, the receiver contained a colorless liquid, which, on standing, separated in two layers: the lower represented a liquid burning with a very smoky flame, while the upper burned at first with a bluish-pale, then with a luminous, and finally a smoky flame. To this mixture is added an excess of dry acetate of potassium, which dissolves in the alcohol, whereupon this dense solution will sink to the bottom, whence it may be drawn off by means of a separating funnel. It is then diluted with four volumes of water, and the whole again saturated with acetate of potassium, which causes the separation of a further small quantity of essential oil. After the solution has become clear, the drops of essential oil are removed and the solution distilled, whereby a hydro-alcoholic liquid is obtained, if alcohol was present. In the case of oil of lemon, which formed the subject of another of the author's assays, the resulting hydro-alcoholic liquid had but a very feeble odor of the original oil.

On continuing the first distillation of the oil further than above stated, which is sufficient for a qualitative test, the whole of the alcohol can probably be driven over, and its percentage in the last distillate ascertained by a suitable hydrometer.—*New Remedies.*

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## ARTIFICIAL ATMOSPHERE.

Among the lectures of the month may be mentioned one delivered before the Society of Arts, by Dr. B. W. Richardson, on the ingenious apparatus invented by Mr. Fleuss, in which by the gradual release of compressed oxygen an accessible atmosphere can be maintained in a condition compatible with life. The oxygen is stored up in the helmet in a chamber of the capacity of one-quarter of a cubic foot and capable of bearing a pressure of sixteen atmospheres, into which sufficient oxygen can be introduced under pressure to last for breathing purposes during five hours. A cuirass that is worn contains two metal chambers which are fitted with small particles of porous india rubber, saturated with solution of caustic soda. The breathing is effected through a leather ori-nasal mask, fitting closely to the face. In the inspiration the air is drawn through two valves, opening inward, one on each side of this mask, and in expiration it passes downward through a kind of artificial windpipe to the first chamber in the cuirass and then to the second. Here the carbonic acid is taken up by the soda, the moisture condenses and runs into a receptacle, and the nitrogen and residual unused oxygen pass upward and escape through an opening near the shoulder into the helmet, where it is renovated by oxygen from the store chamber, the supply of which can be controlled by means of a tap in the helmet, so as exactly to compensate for the quantity consumed. Using this apparatus, it is claimed that a person may remain under water as long as he can go without food. What is quite as important, perhaps, is that it renders it possible also for a person to remain for a long time without injury in a noxious atmosphere, as has been demonstrated in some experiments conducted under the superintendence of Dr. Richardson, in which Mr. Fleuss remained twenty minutes in the diving bell at the Polytechtnic Institution, when filled with carbonic acid, and afterward for a similar time in an atmosphere of amyl hydride.—*Pharmaceutical Journal and Transactions.*

## RETOUCHING VARNISH.

A good retouching varnish is a boon to all retouchers, and those who are unfortunate enough to be plagued by too thin films will gladly hail a formula which promises this desideratum. In his recent work on retouching, M. Janssen, the *Photo. Correspondez* says, recommends the following varnish:

| | | |
|---|---|---|
| Alcohol (sp. gr. 0.830) | 60 | parts. |
| Sandarac | 10 | " |
| Camphor | 2 | " |
| Venetian turpentine | 4 | " |
| Oil of lavender | 3 | " |

This varnish may also be used for paper pictures. The retoucher should not set to work as soon as the negative has been varnished, as the film will not then be hard enough to bear the touch of a lead pencil. The varnished film is in the best condition for retouching when a day old.

### GLOSS FOR PHOTOS.

The same gentleman also gives a formula (said to be used by Salomon, of Paris), for a cerate for giving a high gloss to albumenized pictures. The components are:

| | | |
|---|---|---|
| White wax | 800 | grams. |
| Elemi resin | 10 | " |
| Oil of lavender | 300 | " |
| Benzoin resin | 200 | " |
| Oil of spike | 15 | " |

—*Druggists' Circular and Chemical Gazette.*

Women Pharmacists.—It appears that attention has been recently directed in the New York press to the favorable field which pharmacy is supposed to offer for the employment of women. *New Remedies* remarks that "it is known by those who are familiar with the subject that in Great Britain the registration of women as pharmacists has only been accomplished through persistent efforts," whilst in the United States, on the contrary, no impediments have been offered. Of course this statement is a mistake. No difficulty has existed in this country as to the registration of women as chemists and druggists, by which they are qualified to carry on pharmacy to the fullest extent. The objection which during the last year has been overcome has been to their election as members of the Pharmaceutical Society.—*Pharmaceutical Journal and Transactions.*

## MAKING FERN PICTURES.

There are two ways—the mechanical and the photographical. For the first, take a sheet of strong white paper, and with an atomizer pass over it a spray of very diluted mucilage, so as to obtain a very thin and slightly sticking film, which will make the ferns adhere of which it is desired to make the picture. The ferns and leaves must have been first pressed in a book, and, after arranging them to suit your taste, cause them to lie as closely to the paper as possible; fill an atomizer with very diluted India ink, and blow a spray over the ferns, more or less in proportion as you want a darker or lighter shade. It is well to do this with intermissions, letting it dry a little, so as to avoid excess of moisture and possibility of running the liquid into drops. When nearly dry, but still a little moist, remove the ferns, which may be used over again several times. For the photographic method, cover a sheet of paper with a weak solution of salt in water and some white of an egg, well beaten; after it is dry, take it into a dark room, and with a tuft of cotton pass over it a solution of nitrate of silver (50 grains to an ounce of water); dry it in the dark, and the coat of chloride of silver formed on its surface will receive the impression. Then arrange your ferns between two plates of glass, and cut the paper to the same size as the glass plates; place it under them and expose to the sun, in the same way as a photographer prints a portrait. Watch it until dark enough, and before removing the paper from the glass take it into a dark room. Here place the picture in a solution of hyposulphite of soda, which will dissolve the chloride of silver, but leave the decomposed material (finely divided black silver) which forms the black background, while the shadow of the leaves will be white.—*Chemist and Druggist.*

## BRITTLENESS OF IRON.

A paper recently read before the Society of Telegraph Engineers on the effects produced by the immersion of steel and iron wire in acidulated water (*Nature*, April 22), besides its interest in respect to telegraphy, is not without a bearing upon a practice sometimes followed in cleaning iron vessels. Professor Hughes has found that when iron or steel wire is immersed in acidulated water it rapidly becomes brittle, only a few minutes' immersion in water containing ten per cent. of sulphuric acid producing a very marked effect. This he believes to be due to the absorption of hydrogen in the nascent state, the same result following the exposure of the wire to hydrogen set free by the electrolysis of water. Upon heating the iron wire so rendered brittle to a cherry-red it is restored to its primitive flexibility in a few seconds. Rods of iron a quarter of an inch thick are equally affected when subjected to the action of a sufficient quantity of nascent hydrogen. Iron or steel thus "hydrogenized" is rendered more negative, and whilst in this condition remains free from oxidation. No similar effect has been perceptible in experiments made with copper and brass.—*Pharm. Journal and Transactions.*

## HONORS TO THE PROFESSION.

A bill has been introduced in the California Legislature to prohibit the payment by druggists to physicians, and, by implication, the acceptance by physicians, of a percentage on receipts from prescriptions. In other words, a bill to prohibit the two professions from picking the pockets of their patrons. It is a very gratifying exhibition of the esteem in which the medical profession is held in California, and suggestive of what we are coming to in Illinois. The Pacific Slope is probably not the birth-place, and is certainly not the dwelling place of "Ways that are dark and tricks that are vain," for there are those in Chicago who, being unable to subdue their instincts as sneak thieves, are just as poorly qualified by their habits of rapacity to serve as models of propriety and honor as any in California. Such persons are not to be put down by any prohibitory law. They have known, all along, that their practices are contemptible, and the fact that they take pains to conceal them testifies that they would be ashamed to have them exposed. Their exorbitant greediness of gain triumphs over their sense of decency now, and it would do so then, while the proverbial "honor among thieves," which now protects them from exposure, would then acquire more binding force. We are unable, therefore, to see any advantage to be derived from the passage of the bill, unless it be to arouse the profession to active measures of self-purgation. The humiliating part of this affair is the fact that some of those who stand highest in the profession, and who in other respects are regarded as exemplars, have secret understandings with druggists by which both may wax and grow fat at the expense of patrons. We know such to be the case. And these very men, who, according to ordinary conceptions of justice, are deserving of criminal prosecution, sit in judgment on the frailer members of the profession and vote them unfit to be associated with, because, perhaps, they advertise or commit some other little impropriety! Let us hope that the profession of our own State will not wait for the laity to take measures of protection against the dishonesty of their confidential advisers, but that it will guard its fair name by summarily expelling from its ranks, not only those who habitually steal cases, but also those who are known to be in collusion with druggists to rob the sick.—*Chicago Medical Gazette.*

## NEW SOURCE OF AMMONIA.

The *Chemical News* mentions a patent taken out by Messrs. Rickman and Thompson for the manufacture of ammonia from the nitrogen of the atmosphere and the hydrogen of water, which if it realizes the expectations formed concerning it will exercise an important influence on the future of artificial manures. The operation is carried on in a closed brick furnace, having the ash pit closed to regulate the current of air. The deoxidizing material used is the dust of steam coal. In the presence of this at a full red heat the vapor of water is decomposed and the hydrogen combines with the nitrogen from the regulated current of air. But ammonia is decomposed at a bright red heat, therefore, to prevent loss by accidental excess of temperature five to eight per cent. of salt is mixed with the coal. This chloride of sodium being decomposed at a full red heat in the presence of nascent ammonia, chloride of ammonia is formed which is volatilized without decomposition. It is estimated that with a consumption of 20 to 28 lbs. of the mixture of coal dust and salt per hour from two to three lbs. of ammonium chloride will be obtained.—*Pharm. Journal and Transactions.*

## ACTION OF VARIOUS DIURETICS.

Dr. Maurel, of the French Marine, completes in the *Bulletin General de Therapeutique,* March 30, a paper on the action of various diuretics, based on clinical experiments. The substances tested were the nitrate, chlorate, acetate and iodide of potash, salicylate of soda, digitalis, colchicum and squills. The following is his summary of his results:

I. Nitrate of potash, uncertain as regards increase of quantity of the liquid, notably augments the solid constituents of the urine. The most active quantity seems to me to vary from four to six grams (taken during a period of time, not, of course, in one dose. Ed.)

II. The chlorate, less active than the nitrate of potash in increasing the solid constituents, has an effect on the quantity of the urine, which it augments in a sensible degree.

III. The acetate of potash is doubly uncertain, both as regards the quantity and the solid constituents.

IV. The iodide of potash, instead of being diuretic, seems to decrease the urinary secretion.

V. Salicylate of soda, uncertain as to its effects on the quantity, increases the solid matters of the urine.

VI. Of the three vegetable substances tested only digitalis is really diuretic. It increases at the same time the solids and the liquids of the urine.

VII. Tincture of colchicum is almost inactive upon the urinary secretion.

VIII. The same is the case with tincture of squills and the oxymel of squills, which have afforded a great variety of results.

Of these the nitrate of potash is by far the most effectual in increasing the solids of the urine, its figure in this respect rising as high as one-tenth of the whole, while none of the others exceed one-twentieth or one-thirtieth. Only digitalis can he relied on, in the author's opinion, to increase the quantity of liquid, all the others showing great variations in this respect. These experiments were performed on convalescent or healthy individuals. Of course, it cannot be said positively that they were in the same condition as regards the effects of medicine as the sick, but the difference is altogether an unknown quantity.—*Chicago Medical Gazette.*

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## NOTES AND ABSTRACTS FROM VARIOUS SOURCES.

SPURIOUS VERMILION.—The *Chemiker Zeitung* cautions the public against spurious vermilion, which has, it asserts, been put on the market, and tells how it may be detected. It has a very fiery, brilliant color, but consists merely of red lead, with a small percentage of eosine. The latter color can be extracted by means of strong alcohol, when the red lead is left behind.—*Druggists' Circular and Chemical Gazette.*

A USEFUL hint to cooks was given at a recent Sanitary Convention in Grand Rapids, Michigan. It was pointed out that by adding sugar to sour fruits, during the cooking process, the greater part of the cane sugar was converted by the aid of the acid into grape sugar, which does not possess half the sweetening power. By cooking the fruit first and then adding the sugar to an agreeable sweetness, a very great deal of sugar might be saved.—*Canadian Pharmaceutical Journal.*

FRUIT SYRUPS.—Raspberry, strawberry and cherry syrups of the German Pharmacopœia have to be made by bruising the fruit and letting the marc and juice ferment, after which the juice is strained off and filtered. A better and safer way is to add at once to the freshly bruised fruits five to six per cent. of alcohol, to let the whole stand for some days, decant and filter. Lastly, boil up once to remove the greater part of the alcohol. Syrups made with juice prepared as above retain in a remarkable degree the odor and taste of the fresh fruits.—*The Druggists' Circular and Chemical Gazette.*

THE BEST VEHICLE.—An anecdote is told of a physician who was called to a foreign family to prescribe for a case of incipient consumption. He gave them a prescription for pills, and wrote the direction: "One pill to be taken three times a day, in any convenient vehicle." The family looked in the dictionary to get at the meaning of the prescription. They got on well until they got to the word vehicle. They found "cart, wagon, carriage, buggy, wheelbarrow." After grave consideration they came to the conclusion that the doctor meant the patient should ride out, and while in the vehicle he should take the pill. He followed the advice to the letter, and in a few weeks the fresh air and exercise secured the advantage which otherwise might not have come.

FROSTED TIN.—By dipping *tinned iron*, previously heated till the tin begins to melt, into a mixture of 16 parts by weight of muriatic acid, 8 of nitric acid, 24 of water, and one or two of bichromate of potassa, rinsing and treating with a solution of hyposulphite of soda, very beautiful crystalline designs will be formed.

THE EFFECT OF SMOKING UPON THE TEETH.—In a paper read by Mr. Hepburn before the Odontological Society of Great Britain it was claimed that smoking was beneficial to the teeth. The alkalinity of the smoke neutralizes any acid secretion there may be in the mouth, and the antiseptic property of the nicotine tends to arrest any putrefactive change in carious cavities. Tobacco will only discolor teeth when there is a crack in or loss of the enamel.—*British Med. Jour.*

ASBESTOS POWDER AS A CEMENT.—Asbestos powder made into a thick paste with the liquid silicate of soda, according to a leading English authority, is stated to be found to be of great advantage for making joints, fitting taps, connecting pipes and filling cracks in retorts. It is said to be of great service in the manufacture of nitric acid, sulphuric acid, and other products, because it can be as easily made as applied, hardens rapidly, and prevents the escape of acid vapors.—*Canadian Pharm. Jour.*

BLUE-BLACK WRITING FLUID.—

| | |
|---|---|
| Aleppo galls, bruised | 9 ounces. |
| Bruised cloves | 2 drachms. |
| Cold water | 80 ounces. |
| Sulphate of iron | 3 " |
| Sulphuric acid | 70 minims. |
| Indigo paste | 4 drachms. |

Place the galls and the cloves in a gallon bottle, pour upon them the water, and let them macerate, with frequent agitation, for a fortnight. Press, and filter through paper into another gallon bottle. Next, put in the sulphate of iron, dissolve it, add the acid, and shake the whole briskly. Lastly, add the indigo paste, mix well, and filter again through paper. The ink is to be kept in well-corked bottles. The writing is at first pale green, but soon turns to a jet black.—*Druggists' Circular and Chemical Gazette.*

NEW CEMENT FOR FILLING TEETH.—It consists of the pyrophosphates of calcium and barium, with that of zinc or magnesium, and is made by Rostagni by fusing together in a crucible calcium phosphate and zinc phosphate, pouring out the mass, powdering, dissolving in dilute phosphoric acid, and evaporating to a syrupy consistence. The liquid is mixed with a powder prepared by triturating 3 kilograms zinc oxide with from 5 to 50 grams boracic acid and a little water; the mass is dried, heated to redness for a few hours, and, after cooling, is powdered. For use the powder is formed into a paste with water.—*Dingl. Journal.*

PIESSE has shown that the blue and green colors of some essential oils, as chamomile, wormwood, patchouly, bergamot, and others, is due to the presence of a blue fluid, having a boiling point of 576° F., and of specific gravity .910, to which the name of *Azulene* has been given. In the vaporized state it possesses an intense blue color and has special optical characters. The composition is represented by the formula $C_{16}H_{12}O$. The color of green and yellowish green oils is due to the admixture of more or less yellow resin with the blue azulene, and colorless oils are free from both azulene and yellow resin.—*Canadian Pharmaceutical Journal.*

ANILINE INK PAPER.—Thick filtering paper is soaked in a very concentrated solution of an aniline color, and allowed to dry; it may then be soaked again to make it absorb more color. With a little attention it will not be difficult to prepare the paper so as to have a known quantity of coloring matter in a square of a given size. Paper prepared as above is very convenient to have when traveling; when one wishes to write, it is only necessary to tear off a small piece of the paper and let it soak in a little water. Aniline blue paper may also be employed conveniently for bluing in washing. Other uses of these papers will suggest themselves.—*Druggists' Circular and Chem. Gaz.*

THE PHYSIOLOGICAL ACTION OF IODOFORM.—Högyes (Archiv. für Experimentalle Pathologie, vol. 10) details certain experiments on animals with iodoform. From his experiments he agrees with Binz that poisonous doses of the drug are followed by fatty degeneration of the heart, liver and kidneys, by general paralysis and by death. On dogs and cats it is a narcotic, but not on rabbits and frogs. The blood of animals narcotized by this substance is free from the odor of iodoform. This author, Högyes, believes that iodoform introduced into the system gives up free iodine, which combines with albumen, and that, in its general effects, iodoform poisoning is identical with that of iodine poisoning.—*Chicago Medical Gazette.*

PURPLE INK WITHOUT ANILINE.—Redwood gives the following formula of a Dr. Normandy's Purple Ink, called the "King of Purples."

| | | |
|---|---|---|
| Campeachy wood | lbs. | 12 |
| Boiling water | gall. | 12 |
| Verdigris or acetate of copper | lb. | 1 |
| Alum | lbs. | 14 |

Digest the first two ingredients together, and strain the liquor upon the finely divided salt of copper, then immediately add the alum. For every 17 gallons of this liquid add 4 pounds of gum arabic or gum Senegal.

Let these remain for three or four days, and a beautiful purple will be produced.

Beasley gives the following formula: Add a little muriate (chloride) of tin to a strong decoction of logwood. A little gum may be added. —*New Remedies.*

THE HYGIENIC AND THERAPEUTIC RELATIONS OF HOUSE PLANTS.—Dr. J. M. Anders, of this city, has been making some original investigations in this direction, which threaten to completely upset all our preconceived and acquired ideas on this subject. He refers to the experiments which have demonstrated that it requires twenty thrifty plants to give off as much carbonic acid as one baby sleeper. He has visited a large number of florists in this city, and collected a considerable array of facts, which would seem to prove beyond controversion that the moist atmosphere generated by the transpiration of plants forms a most desirable climate for the consumptive, and that plants are not only desirable in the case of the sick, but should be regarded as of paramount importance in every bed room and every sitting room, particularly where heated by furnaces. He has reached by experiment the following formula: Given a room twenty feet long, twelve feet wide, and ceiling twelve feet high, warmed by dry air, a dozen thrifty plants with soft, thin leaves, and a leaf surface of six square feet each, would, if well watered and so situated as to receive the direct rays of the sun for at least several hours, raise the proportion of aqueous vapor to about the health standard.—*New York Clinical News.*

WARBURG'S TINCTURE.—We republish the formula of this boss shot-gun prescription because the medical journals continue to laud its virtues:

℞ Aloes (socot.) libram,
Rad. rhei (East India),
Sem. angelicæ,
*a.* Confec. damocratis, aa uncias quatuor.
Rad. Helenii,
Croci sativi,
Sem. fœniculi,
*b.* Cret. preparat., aa uncias duas.
Rad. gentianæ,
Rad. zedoariæ,
Prep. cubeb.,
Myrrh elect.,
Camphor,
*c.* Bolet laricis, aa unciam.

The above ingredients are to be digested with 500 oz. of proof spirit in a water bath, for twelve hours, then expressed and ten ounces of disulphate of quinine added; the mixture to be replaced in the water bath until all the quinine be dissolved. The liquor, when cool, is to be filtered, and is then fit for use.

*a.* This confection is to be found in the London Pharmacopœia, 1746.

*b.* Added by Dr. Warburg, to correct the acrid taste.

*c.* This is the Polyporus laricis, Polyporus officinalis, Boletus purgans, or larch agaric.

GARLIC IN HYDROPHOBIA.—The *British Medical Journal*, May 15, page 744, quotes from the *Recueil de Medecine Veterinaire* a statement by M. Bouley to the effect that garlic has been known to subdue the symptoms of hydrophobia. "A young man who had been bitten by a mad dog speedily presented the symptoms of hydrophobia. His family, in a state of great alarm, scarcely knowing what to do with the sufferer, shut him up in a loft where some garlic had been left to dry. In his delirium the poor fellow seized the bundles of garlic, ate greedily of them, and soon became exhausted and fell into a deep sleep. When he awoke he was cured and the symptoms of rabies had disappeared." Possibly the medicinal properties of garlic have been too much neglected. During the prevalence of cholera the Jews are said to have used with success the application of garlic to the pit of the stomach and the soles of the feet, and it is generally believed by sailors that onions have the property of absorbing diseases, and that those who partake of onions which have been lying in the room in which there is a person ill of an infectious disease will assuredly take the disease. There is often some germ of truth in generally accepted facts.—*Pharmaceutical Journal and Transactions.*

A NOVEL METHOD OF WARMING RAILWAY CARS.—Among the many inconveniences of the "compartment system" in European railway cars, the difficulty of devising some method of warming them in winter is by no means the least. Our readers who have been abroad are aware that the plan almost universally adopted is that of "foot-warmers," or flat metallic boxes filled with hot water, which are changed for fresh ones when they get cool. These are a tolerable make-shift, but on express trains they are not always changed as often as they ought to be. An experiment is now being made on the route from Paris to Lyons of using a solution of acetate of soda in these foot-warmers. This substance in dissolving absorbs or renders latent a large amount of heat, which becomes sensible or is given out again during the process of crystallization in cooling. The warmers are filled with the solution at a temperature of about 100° C. (212° F.), and the cooling down takes from twelve to fifteen hours. They are then heated in a stove until the crystals are redissolved, when they are ready for fresh use. The material is not very expensive, and it could easily be manufactured in much larger quantities than at present if the demand required it. The new system was lately tried on the express train leaving Paris at 7.15 P. M. and reaching Lyons at 4.31 A. M. The compartments were each supplied at starting with two warmers containing acetate of soda. At Lyons most of the warmers were still so hot that one could only apply the back of the hand to them. If they had been filled with hot water it would have been necessary to renew them three or four times *en route.*—*Boston Journal of Chemistry.*

# AMERICAN PHARMACEUTICAL ASSOCIATION.

OFFICE OF THE LOCAL SECRETARY, 348 BROADWAY,
SARATOGA SPRINGS, N. Y., June 10, 1880.

The twenty-eighth annual meeting of the American Pharmaceutical Association will be held in this village in September next, from the 14th to 18th inclusive. From the accessible position that Saratoga occupies, as well as the natural attractions that it possesses, in connection with the fact that abatements from the regular hotel rates have been obtained, and that efforts are being made to secure low railroad fares from the larger commercial centers, and that special circulars of invitation will be forwarded to druggists throughout the United States and Canada, a very large attendance of those interested in pharmaceutical topics is predicted.

You are respectfully invited to make a display of your goods in the exhibition to be held in connection with the meeting, for which purpose the Roller Skating Rink, one hundred and fifty feet long and seventy-five feet wide, situated on the ground floor, has been secured. The room is well lighted and ventilated, and is probably the most desirable that the Association has ever occupied for the purpose. The Delaware and Hudson Canal Company, controlling the Albany and Susquehanna, the New York and Canada, and the Rensselaer and Saratoga railroads, as well as the Citizens' and People's line of steamers from New York to Troy and Albany, have all generously offered to transport merchandise intended for display on this occasion free of charge both ways. The Fitchburg Railroad Company has kindly offered to refund return charges on all goods for display forwarded from points on its road if returned by same route as forwarded. Exhibitors desiring to avail themselves of these arrangements should forward their goods in care of the undersigned.

The attention of those contemplating an exhibit is called to the following from Chapter VIII. of the By-Laws:

### ARTICLE V.

SECTION 1. The Association invites manufacturers and others to exhibit at the annual meeting crude drugs, chemicals, pharmaceutical preparations, chemical and pharmaceutical apparatus and utensils, and such objects as possess a general scientific or special pharmaceutical interest.

SEC. 2. The following articles shall not be admitted to these exhibitions: Proprietary and patented medicines, medicinal or pharmaceutical preparations, the names of which have been copyrighted or the complete working formula for which is withheld, and such chemical preparations or mixtures which are offered under other than their proper scientifically recognized names.

SEC. 3. The committee on exhibition, appointed under Chapter VIII., Article 2, Section 9, shall report during the meeting on the articles exhibited, with such comments as in their judgment may be deemed proper.

Should you decide to forward goods for exhibition, an early reply, indicating the amount of space that you will require, as well as the character of the goods to be exhibited, will enable me to arrange the display in the most advantageous manner; and as all plans tending towards a consummation of this design must be completed by August 1st, at farthest, the importance of immediate attention will be obvious.

Yours truly, CHARLES F. FISH,
*Local Secretary.*

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CANTHARIDAL COLLODION.—The following is a formula of one of the leading manufacturers:

| | |
|---|---|
| Powdered cantharides | 8 troy ounces. |
| Stronger ether | q. s. |
| Stronger alcohol | q. s. |
| Collodion cotton (pyroxylin) | 144 grains. |

Mix the cantharides with four fluid ounces of the stronger alcohol, pack it in a funnel for displacement, cork the lower end of the funnel, add four fluid ounces of stronger ether, and cover the funnel with a plate of glass, to fit tightly and prevent evaporation. Let it stand twelve hours, and then displace with stronger alcohol and stronger ether, in equal proportions, until fifteen fluid ounces have passed, which reserve. Then displace with some of the menstruum until four fluid ounces have passed, which evaporate to one fluid ounce, and add to the first fifteen ounces. Lastly, add the pyroxylin, and agitate occasionally until it is dissolved.—*The Druggists' Advertiser.*

# EDITORIAL.

## A CARD FROM DR. H. D. GARRISON.

The following card, which appeared in the Chicago *Tribune* of May 21st, needs little introduction or explanation. The writer, while lecturing upon Chemistry, Toxicology, Physiology, etc., during many years in this city and in Cincinnati, was always animated by an earnest desire to know and teach the exact truth, whatever might be the consequences or inferences, and further to maintain a high standard of graduation. In the prosecution of these aims he received the generous aid and sympathy of a number of excellent men, both as colleagues and as students. The esteem he formed for these men will never lessen. But since there is now so much disagreement among eclectics as to their essential faith, and at the same time so much liberty and latitude permitted in the regular profession, the writer feels, as he has for some time felt, that he is really misnamed when he is named at all as belonging to any sect in medicine. The word "eclectic," in its original sense, is a good one, descriptive of every honest scientist; but when it is made to stand for a believer in specific medication, as at present taught in certain quarters, or for an opponent of vaccination, it does not represent his honest convictions as to what is the truth in these respects at all:

"CHICAGO, May 21.—Observing that my name was used in your issue of the 20th as a member of a committee of eclectic physicians of this city, I feel impelled to publicly state that I do not wish to be longer regarded as belonging to any particular school or party in medicine.

"The original and cardinal doctrines of the eclectic branch of the medical profession, viz.: opposition to general blood-letting and other depletory measures, and to the use of mercurials, antimonials, arsenicals and preparations of lead for their constitutional effects, have been so fully indorsed and practically accepted by the regular (allopathic) school of medicine that I consider further partisan strife in this respect as unwarranted by either the interests of science or humanity.

"On the other hand, the numerous remedies introduced by eclectics have been so generally tried and adopted by all schools of practice that I perceive no reason for further special efforts in this direction.

"It is true that, as a rule, the introduction of these remedies has not been credited up in medical literature to those who were really deserving of whatever credit was due; but if the mercilessly exact judgment of advancing science shall pronounce many of them to have been as much overrated as I now believe they are, the present just cause of complaint in this regard may become a matter of congratulation.

"The generous liberality which I have always fancied, at least, to be characteristic of eclectics, has for some time been the strongest tie between me and them; yet I suspect some of them will never forgive me for ceasing to contend for a victory which I consider won.

"Feeling the same profound sympathy for all, whether allopathic, homœopathic or eclectic, who are earnestly endeavoring to mitigate human suffering and extend the boundaries of scientific knowledge, I wish to be regarded as friendly to and by all laborers in the field of science. "H. D. GARRISON."

## TO WHOM DOES A PRESCRIPTION BELONG?

This interesting but threadbare question is still being discussed by our contemporaries. To our mind, there never appeared to be any question about the matter. The ownership is so plainly vested in the purchaser (patient) that we wonder that a contra claim should ever have been thought of. It is conceded by all that the patient may have the prescription filled by whom he pleases, in the city in which it was written or elsewhere, or he may neglect or refuse to have it filled at all, or he may delay having it filled as long as he pleases. These concessions cover the entire ground in dispute.

The fact that the prescription may be properly filled by any pharmacist in the country, or not at all, at the convenience and pleasure of the patient, destroys its character as "a private letter or order," as some maintain, and establishes its character as private property, with which the owner may do as he pleases. It has been purchased (and paid for, it is hoped) and delivered like any other article of merchandise, and therefore the tenure is as good to the purchaser as is that of any recipe in this journal to the reader. Suppose that, instead of prescribing drugs, the doctor should prescribe a generous diet, bathing, etc., would the patient never have the right to eat heartily, or bathe again, without first consulting a doctor? Should he be denied the right to repeat this prescription?

The patient incurs some risk, as all will admit, when he takes a prescription at first. May he not repeat the risk by repeating a prescription which has benefited him? No one pretends to hold the prescriber responsible for the effects of a prescription given in any other way, at any other time, or to any other person, than as contemplated by the physician at the time of its issue. Therefore, the plea of responsibility without compensation is without foundation.

If a prescription is made in the morning and filled in the evening, or next day, or next week, by which time the character of the case may have completely changed, no objection is made; but if a draught prescribed in the morning is called for again in the evening, or next morning, or next week, without first seeing and feeing the physician, he feels bad about it, and not wishing to put his complaint into its true form, viz.: that he has missed a fee, talks very philanthropically about the avaricious druggists permitting the people to run such dreadful risks by repeating prescriptions.

The cause of the whole trouble lies in the simple fact that the medical profession is so much over-crowded that unless the people can be persuaded or forced to paronize them more liberally some must fare badly or abandon the profession. Even if the present army of physicians were assured of a competency, in a few years the number of candidates for patronage would be so much augmented that the same state of affairs would again occur. The medical profession, like that of the pharmacist, is regarded by the public as such a "nice business" that the supply will always exceed the demand until the supply is regulated by law, which is the only road out of the labyrinth of difficulties.

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THE American Medical Association terminated its thirty-fifth meeting on June 4th, at New York. The next meeting will occur at Richmond, Va., on the first Tuesday of next May. The President-elect is Dr. Hodgkins, of St. Louis.

## ALUM BAKING POWDER.

Most of the cheap baking powders in the market, and especially those sold in bulk, contain, more or less, usually 20 to 30 per cent. of powdered burnt alum. Makers, venders and consumers have generally thought that the alum was an innocent constituent, but the experiments of Mr. Henry Mott, detailed in the *Journal of the American Chemical Society* (Vol. 1, No. 2), show that, in the case of dogs at least, alum exerts a decidedly pernicious influence, causing in most cases vomiting, and in all severe constipation. The alum was given in the form of biscuits containing an excess of alum baking powder. Biscuits containing the same quantities of cream of tarter baking powder were eaten freely by the dogs without any subsequent suffering.

Gastric juice procured from living dogs on being treated with a very small percentage of hydrate of alumina soon lost its power to digest fibrin, and even after prolonged contact with albumen exerted no effect upon it.

Although alum is in common use as a domestic remedy for sore mouth, diarrhœa, etc., it is capable of exerting marked poisonous qualities if introduced into the stomach in considerable quantities. Violent vomiting and even death have resulted from doses of 30 grains, but usually only moderate vomiting is produced by much larger doses. The effect of small doses often repeated, as happens in the case of those eating bread made by the use of alum baking powder, is not yet definitely determined.

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WHAT DOES IT MEAN?—In the report of the proceedings of the "Decennial National Convention for revising the Pharmacopœia," as printed in the *American Journal of Pharmacy*, will be observed an order that the call for the next convention shall include "all incorporated pharmaceutical and medical colleges, all incorporated pharmaceutical and medical societies, and the army, navy and marine hospital service of the United States." Homœopathic, eclectic and physio-medical medical colleges and societies are, with few or no exceptions, incorporated institutions. If these are to be admitted to send delegates we want to be there to see the fun at the next convention. The fusing of these discordant elements into a homogeneous and pliable mass in the convention crucible will prove the most interesting experiment of the age. It really looks as if the regular bear were about to hug the little wolves to death, which is the only method by which they can be effectually exterminated.

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## SPURIOUS DIPLOMAS.

The authorities of Philadelphia, urged on by the enterprise of the *Record*, have again made an attempt to suppress the bogus diploma shops of that city. "Old Buck" (John Buchanan) and Chas. G. Polk have been arrested and placed under $10,000 bonds for further hearing. It is said that records captured show that over 3,000 degrees have been sold in this country and abroad by these rascals, and that about half a ton of diplomas "in stock" were found. With these men several others, among whom are a few hypocritical preachers, are associated in this most degraded traffic.

This Dr. Polk, if we remember correctly, used to be a very prolific writer in our pharmaceutical journals. His specialty was "our indigenous materia medica," and the substance of his lucubrations always crystallized into "my favorite prescription," into which he almost invariably lugged a little of some mercurial preparation, apparently to sanctify the mess. No doubt these men will manage to slip out of the net in which they are temporarily caught, but the notoriety given to the concerns may aid in arresting the infamous business. To the medical profession this whole matter is stale, because during the past ten years it has been known that these concerns were doing an illegitimate business.

As the degree Ph. D. was also kept in stock and sold, we may expect to find pretenders in our profession with no other license or badge of authority.

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**PHARMACY IN TEXAS.**—The second annual meeting of the Pharmaceutical Society of Texas occurred May 15. The officers elected for the ensuing year are, President, L. M. Connor; First Vice-President, R. E. Luhn; Second Vice-President, A. Nettie, Jr.; Third Vice-President, E. L. E. Castleton; Recording Secretary, Irving Hill; Corresponding Secretary, Dr. Bass; Treasurer—no choice made.

## PHARMACY IN IOWA.

Our friends in Iowa are putting their Pharmacy law into practical operation. Through the courtesy of Mr. George H. Schaffer we have before us all the blanks and forms to be used in the preliminary work of registration. The law and its mode of execution seem to be unexceptionable, except in one feature, which is the examination *in absentia.* For this purpose the Commissioners of Pharmacy prepare and transmit a series of questions to a notary public, who is supposed to read them to the candidate and receive and note his answers thereto. In many, probably most cases, the notaries will perform this duty fairly and honestly, but in a considerable number of cases the notaries are certain to give their friends an opportunity to consult authorities and thus make a fair showing of knowledge which they do not really possess. As the applicant is allowed to select his notary, the opportunity for this species of fraud is very apparent. Those who argue, if any should, that men will not resort to any such unfair means of acquiring certificates of competency, but argue their own incompetency from lack of experience in matters of this nature.

Aside from the question of competency, the law is a good one and cannot fail to benefit equally the trade and the people of Iowa. The clauses regulating the sale of poisons, suppressing the sale of liquors as beverages by pharmacists, and taxing traveling nostrum vendors, are alone of inestimable value.

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Poisonous Beef.—On June 14th, about thirty persons in attendance upon a free Methodist camp meeting near Elgin, Illinois, were badly poisoned by eating canned beef. At last accounts the doctors of Elgin, Geneva and St. Charles were as busy as possible in trying to save the cases, many of which were very alarming. The poisonous action of this beef is not due to lead, tin or any other impurity, but apparently to the products of a kind of fermentation, analogous, if not identical, with that which causes the juices of many dead bodies to become so virulent that a wound made, for example, with a dissecting knife, by which a minute amount of the virus is introduced, not unfrequently proves rapidly fatal.

It is not impossible that similar dangers may lurk in even the best brands of extract of beef, especially if they are not fresh and have been exposed to prolonged warmth during our hot summers. Fortunately these extracts are generally reboiled in the process of making beef tea before they are consumed, by which process the virulent matter, if any is present, is rendered innocuous.

## THE READY PEPSIN TEST.

A paper prepared by Dr. J. Merritt, and read before Kings County Medical Society recently, proposed as a ready test for pepsin the following process: Shake ten grains of pepsin with about one ounce of water, in a test tube of about one inch in diameter, and when solution has occurred add an equal amount of a saturated solution of chloride of sodium, and allow the mixture to stand twenty-four hours, when the pepsin will have separated and risen to the top as a film, of greater or less thickness, according to the amount of actual pepsin present in the sample.

By this process the author had tested several prominent brands of pepsin, and found that all of them, except one brand, were nearly worthless. Indeed, it appears probable from the paper that the manufacturer of the brand of pepsin which appeared to be so excessively strong was also the originator of the test, if not the real author of the paper.

This attempt to throw the pepsin makers generally into the shade and out of the market was promptly resisted by Dr. Squibb, who has satisfactorily shown that the test is utterly worthless and misleading; that, according to its indications, pepsin made from a pig's bladder, and having no digestive power at all, is stronger than that made from the pig's stomach. From his paper the secret leaks out that six ounces of good pepsin can be made from one pig's stomach, which shows that the business must be very satisfactory in a commercial point of view.

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SINCE our last issue Prof. Taylor, the eminent English toxicologist, died of pneumonia and anasarca.

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GREEN B. RAUM, whom the boys call "Green Bay rum," is the Commissioner of Internal Revenue who presided at the late Republican Convention in Illinois. When we reflect how outrageously and unrighteously bay rum is taxed and retaxed, at every step it takes between the importer and the consumer, the name seems to be singularly appropriate for a commissioner of internal revenue.

DR. JNO. W. NEERGARD, one of the leading pharmacists of New York City, recently died of pneumonia, at the age of seventy.

THE National Eclectic Medical Association held its convention in this city this year, and elected as its President Prof. A. L. Clark, M. D. The next meeting will occur in St. Louis.

AMONG the many brands of toilet soaps in the market we have seen none more handsome than the manufacture of Kendall & Co. Dealers say they sell rapidly and give the best of satisfaction.

DR. KEITH, of London, loses only three per cent. of his ovariotomy cases, which is, we believe, the finest record ever made in surgical practice. He adopts Lister's antiseptic method.

IF your soda-water generators or fountains need repair or replacement by new ones, please remember that the Hartt Manufacturing Co., of 24 and 26 South Jefferson street, Chicago, are in that line, and are highly recommended.

THE fall term of the Chicago College of Pharmacy will begin October 4th, and continue until the end of February. Those wishing the announcement containing full particulars should address Thos. Whitfield, 240 State street.

LACTOPEPTINE, made by the New York Pharmaceutical Co., has received the fullest indorsement of the medical profession, and therefore must be a meritorious article. Some physicians of this city prescribe it very largely and speak in the strongest terms of its value.

RECENTLY, Dr. Tweedy was informed that because he was not a member of the Church of England he could not be elected to a position in King's College, London, the charter of which explicitly limits the professors to that profession of faith. In Turkey, however, by decree of the Sublime Porte, "difference in religion cannot be held as a motive for exclusion from or disqualification for any public function, nor from the advantage of the exercise of any profession or industry." Query: How many years is Turkey in advance of us in this matter?

THE hair and paint brushes made by Gerts, Lumbard & Co., of this city, are not excelled by any made in the world, in the matters of beauty, durability and variety. They also have a very heavy stock of tooth brushes. We are always glad to note the successful establishment of industries of this kind, because heretofore most of these goods have been imported.

MR. PETER VAN SCHAACK and family are now in Europe. While there, Mr. V. S. will make numerous purchases, and such mercantile connections as will enable his firm to import more largely in the future. Mr. Henry Fuller has recently been on substantially the same errand. Both will learn how much better we do many things than the Europeans.

NEW WORDS.—While many words once in common use are now nearly obsolete, few persons are aware how large a number of new words are constantly coming into our language. The Supplement of the new edition of Webster's Unabridged Dictionary, recently issued, contains among other attractive features an addition of 4,600 new words and meanings, and yet it is but a few years since a general revision was made and great care taken to insert all the words then properly belonging to the English language. Where these words come from and what they are is a surprise to persons who have not examined them. That they have not been hastily compiled is evidenced by the accuracy of and careful study given to their etymology and definitions.

## BOOK NOTICES.

*Photographs of Medicinal Plants from Natural Specimens.* By C. L. Lochman, Bethlehem, Pa.

These photographs are 4½ by 6½ inches, mounted on strong, white card board, 8 by 10 inches. We have received 54 kinds, nearly all of which represent indigenous or naturalized medicinal plants in constant use in medicine. We did not before suppose it possible to make such beautiful and of course exact representations of plants by photography. No one could fail to recognize a plant, however strange to him, by comparing it with its representation in these photographs. Hence, to those not familiar with the medical botany of this country these plates have the greatest interest and value. The low price at which they are sold is almost incomprehensible, viz.: $6.75 for the full set of 56, and additional ones as fast as produced at $1.50 per doz. We have bought hundreds of photographs in various parts of Europe, Asia, Africa and America, and yet never saw them so perfect, large and finely mounted at such low rates.

*Tenth Annual Price Current of Van Schaack, Stevenson & Co., Wholesale Druggists, 92 and 94 Lake Street, Chicago.*

This is an 8vo. volume of 530 pages, designed for gratuitous distribution to their customers. In size, completeness and typographical style, this price list is perhaps unrivaled at home or abroad. We are always glad to receive it, because one of the most important qualities of drugs is *value*, for which information we now almost instinctively turn to this reliable authority.

*A Practical Hand-book of Medical Chemistry applied to Clinical Research and the Detection of Poisons;* partly based on Bowman's Medical Chemistry. By William Green, M. D., Demonstrator of Chemistry in the Medical Department of the University of Pennsylvania, etc., etc. One vol. 8vo., pp. 310. Published by Henry C. Lea's Son & Co., Philadelphia.

The author has very faithfully and skillfully compiled most that is known of the more interesting organic bodies, and has given a brief but intelligible outline of the tests and processes employed in toxicology, and in the analysis of milk, urine, bile, blood, etc. The descriptions of organic bodies, as urea, uric acid, creatine, leucine, etc., are for the most part similar to those found in Lehmann's work on physiological chemistry. Indeed, so closely do these descriptions resemble each other that the reflection crosses the mind sometimes that if there had been no Lehmann there would have been but little Green. But Lehmann, too, must have copied largely from some source. We only regret that in many of these cases nothing new is given, although much must have been developed since Lehmann wrote in 1849. The identical cuts used in the illustration of Lehmann's work are used in this, which is not improper, since we believe the present firm is the successor of the previous one which issued the work of the great German chemist, but the cut which Lehmann used to illustrate the crystalline form of creatine, Prof. Green labels creatinine, while Lehmann's cut of the crystals of the latter bears the label of the former. In addition to the cuts borrowed from, but not credited to Lehmann, the work is profusely illustrated by very good wood cuts.

Altogether the work is a very creditable one to the author, and exceedingly useful to the pharmacist or physician who wishes to know the general properties of these zoochemical compounds, or to make any examination ordinarily required in diagnosis or in toxicological inquiry.

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GOA POWDER.—Professor Attfield said there could be but little doubt that the substance called Goa powder when first produced in the wood contained no chrysophanic acid as such, but that this acid was produced by the action of the air, and probably of moisture, on a substance which might be called chrysorabin, or which might be termed potential chrysophanic acid. It might be that Goa powder, as Mr. Squire hinted, might cease after a time to be popular, and it might be that the question of the mode of formation of the substance might also lose interest. But the interest attaching to the formation of such things in plants could not subside, and he thought that no class of men could better investigate this question than pharmacists—whether they did so on this wood, or any other, whether they had to go to the Malabar coast or to Brazil, or found it amongst their forests at home—because it seemed to him to involve a knowledge of chemistry, microscopy and structural botany such as pharmacists commonly possessed. If pharmacists, especially those who had been educated during the last thirty years, would turn their attention to this matter, surely the question of formation—whether conversion of one tissue into another, or the production of a secretion, or the conversion of a fluid like honey into a granular substance like solid honey—might shortly be set at rest. He might add that of the different samples of Goa powder he had examined since Mr. Kemp of Bombay first put the article into his hands, some chiefly contained chrysophanic acid, others potential chrysophanic acid.—*Pharm. Jour.*

## REVIEW OF CHICAGO DRUG MARKET.

There is a marked improvement in trade and prices, for many articles are stiffening. The most notable advance has occurred in opium, which within the past two weeks has gained fully $1.75 per pound. Morphine moves in sympathy with it, but prices have not yet reached the full proportionate advance. Quinine and cinchonidia, with an increased consumption, have also advanced in price, and some of the foreign quinine held in New York has been reshipped to Europe, prices there being relatively better than here. With the prospects for fine crops generally throughout the country, a healthy and active trade in all branches of business is anticipated.

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|---|---|---|
| Acid, Nitric | lb. | 12 @ 14 |
| " Tartaric | " | 58 @ 60 |
| Aloes | " | 16 @ 50 |
| Amm., Carbonate | " | 22 @ 25 |
| " Muriate | " | 14 @ 16 |
| Bleaching Powder | " | 4 @ 5 |
| Blue Vitriol | " | 10 @ 12 |
| Borax | " | 12½ @ 14 |
| Camphor | " | 28 @ 33 |
| Cantharides | " | 1.35 @ 1.50 |
| Cassia | " | 25 @ 30 |
| Castile Soap | " | 8½ @ 17 |
| Chamomile Flowers | " | 30 @ 38 |
| Cinchonidia, oz. bots | oz. | 1.05 |
| Cloves | lb. | 43 @ 45 |
| Cream Tartar (pure) | " | 39 @ 40 |
| Cubebs | " | 22 @ 25 |
| Cuttle Fish Bone | " | 28 @ 30 |
| Ergot | " | 75 @ 85 |
| Ginger, Afr | " | 10 @ 15 |
| " Jam | " | 25 @ 30 |
| Glycerin | " | 20½ @ 85 |
| Insect Po | " | 65 @ 75 |
| Iodine, Resub | " | 6.40 @ 6.60 |
| Ipecacuanha Po | " | 1.50 |
| Mercurials— | | |
| Blue Pill | " | 50 @ 53 |
| Calomel | " | 68 @ 70 |
| Corrosive Sub | " | 58 @ 60 |
| Mercurial Oint | " | 48 @ 56 |
| Red Precipitate | " | 78 @ 80 |
| Morphia Sul. P. & W. | ⅛ oz. | 5.35 @ 5.50 |
| Nutmegs | lb. | 1.10 |
| Oil, Anise | " | 2.10 @ 2.25 |
| Arnica Flowers | lb. | 19 @ 22 |
| Assafœtida | " | 23 @ 25 |
| Balsam Copaiba | " | 75 @ 80 |
| " Tolu | " | 75 @ 80 |
| Bees-wax | " | 30 @ 33 |
| Oil Bergamot | " | 3.00 @ 3.25 |
| " Cassia | " | 1.50 @ 1.60 |
| " Castor | gll. | 78 @ 88 |
| " Lemon | lb. | 3.25 @ 3.50 |
| " Olive | gll. | 80 @ 3.50 |
| " Pennyroyal | lb. | 1.25 @ 1.30 |
| " Peppermint | " | 3.25 @ 4.00 |
| " Sperm (pure) | gll. | 1.40 @ 1.50 |
| " Wintergreen | lb. | 3.00 @ 3.25 |
| " Roses | oz. | 5.00 @ 8.00 |
| Opium | lb. | 8.25 |
| Pepper, Cayenne | " | 28 @ 30 |
| Potass., Bromide | " | 38 @ 45 |
| " Chlorate | " | 22 @ 25 |
| " Iodide | " | 4.50 @ 4.60 |
| Quicksilver | " | 55 @ 60 |
| Quinine, P. & W., 1 oz. btls. | | 3.10 |
| Salicin, 1 oz. vials | oz. | 44 @ 50 |
| Santonin, 1 oz. vials | " | 75 @ 80 |
| Seed, Canary | lb. | 3¾ @ 5 |
| " Hemp | " | 3¾ @ 5 |
| Senna | " | 18 @ 25 |
| Seneka Root | " | 75 @ 80 |
| Shellac | " | 40 @ 48 |
| Soda, Bicarb | " | 4 @ 6 |
| " Sal | " | 1¾ @ 3 |
| Squills | " | 14 @ 16 |
| Sugar, Lead, white | " | 18 @ 20 |
| Tonqua Beans, Angostura | " | 2.50 @ 2.75 |

# THE PHARMACIST.

VOL. XIII. CHICAGO, AUGUST, 1880. No. 8.

## EDITORIAL.

### IODINE A SUBSTITUTE FOR QUINIA.

Several years ago a Russian physician stated his belief that iodine is fully the equal of quinia as a remedy in malarious disease. Acting on this statement, Dr. Grinnell, of Tenn., Government physician at the Wichita Indian Agency, tried iodine treatment in 135 cases of intermittent fever with a success as complete and uniform as could have been expected from sulphate of quinia. The dose given was ten drops of the officinal tincture three or four times daily. To avoid the rough taste and smell, the tincture was largely diluted with water or syrup, to which enough iodide of potassium was added to hold the iodine in solution. Several physicians, learning of the results obtained by Dr. Grinnell, have tested the iodine treatment and confirm his statements. We have long thought that quinine cures by killing the microscopic vegetable organisms which are probably the sum total of malaria. Arsenic seems to act in the same manner, but, unfortunately, is liable to exceed its duty in the case and do mischief of a serious character. Carbolic acid and other antiseptic agents have occasionally been observed to exert decidedly antiperiodic qualities. Iodine, on this theory of action, seems to be well adapted to do just what these doctors say it has done. It is by no means so poisonous as is generally supposed. Some years ago three to five grains were regarded as the dose range of iodide of potassium; now ten to fifteen grains three times daily is not unusual, while one physician of this city, whose reputation in chronic diseases brings him an incredible amount of business, is said to give it in quantities amounting in some cases to one thousand grains daily.

## DELICATE TEST FOR ALBUMEN.

For ordinary purposes nitric acid, supplemented by heat, is sufficiently accurate and sensitive; but it sometimes happens in the analysis of urine that a more delicate test of albumen is desirable. It is well known that while ortho-phosphoric acid (ordinary dilute phosphoric acid) has no action on albumen, a solution of meta-phosphoric acid (glacial phosphoric acid) in contact with a solution containing only a trace of albumen at once causes a distinctly visible precipitate. This test has heretofore been used chiefly to distinguish solutions of ortho- from meta-phosphoric acid; but whoever will reverse the aim of the test will be surprised by its delicacy. It is recommended to add a small bit of glacial acid about the size of a pea to half an ounce of cold distilled water, allowing the acid to slowly dissolve without the application of heat, which would tend to convert the solution into ortho-acid. Meta-phosphoric acid in a purer form may be obtained in small quantities by burning a small fragment of phosphorus in a suitable closed vessel, scraping up the snow-like anhydride and dissolving it in distilled water.

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DR. TANNER, who is now astonishing every one by his prolonged fast in New York, performed the same exploit in Minneapolis during the summer of 1877. On that occasion he abstained from food entirely for forty-two days, but during the whole time drank freely of water. His bowels were not evacuated during a period of forty-seven days. The experiment was made then by Dr. Tanner simply to ascertain how long he could exist without food, and was reported to the writer by Dr. Moyer, a very intelligent and trustworthy gentleman, then occupying the same office with Dr. Tanner. At the end of the fast, when Tanner began to eat, his appetite was insatiable.

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WE are informed that the face lotion which, by its escharotic action on the face of a young lady, formed the basis of a suit for damages was a solution of corrosive sublimate.

## COLORED FIRES.

In a short time the whole country will be ablaze with political enthusiasm, and of course pyrotechnic displays will be in demand. To aid the brotherhood in meeting the demand, we herewith give some formulæ which, if faithfully adhered to, will give good results. The constituents must be *pure, dry and finely powdered*, and finally well mixed together. We need hardly add that each constituent should be powdered separately.

Red Fire, *burns quickly:*

| | | |
|---|---|---|
| ℞ Chlorate of potassium | 40 | parts. |
| Nitrate of strontium | 39 | " |
| Sulphur | 18 | " |
| Charcoal | 3 | " |

Mix.

Red Fire, *burns more slowly:*

| | | |
|---|---|---|
| Chlorate of potassium | 16 | parts. |
| Nitrate of strontium | 60 | " |
| Sulphur | 21 | " |
| Charcoal | 1⅓ | " |

Mix.

Red Fire, *burns very slowly:*

| | | |
|---|---|---|
| Chlorate of potassium | 10 | parts. |
| Nitrate of strontium | 68 | " |
| Sulphur | 22 | " |
| Charcoal | ¾ | part. |

Mix.

Red Fire, *burning slowly but brilliantly*, is made by mixing together one part of powdered shellac and four parts of powdered nitrate of strontium. These agents may be mixed together and warmed until the shellac is partially melted, then cooled and powdered together.

Green Fire, *burns rapidly:*

| | | |
|---|---|---|
| Chlorate of potassium | 36 | parts. |
| Nitrate of barium | 40 | " |
| Sulphur | 24 | " |

Mix.

GREEN FIRE, *burns slowly:*

| | |
|---|---|
| Chlorate of potassium | 9 parts. |
| Nitrate of barium | 70 “ |
| Sulphur | 21 “ |

Mix.

VIOLET FIRE, *burns rapidly:*

| | |
|---|---|
| Chlorate of potassium | 52 parts. |
| Carbonate of calcium | 29 “ |
| Powdered malachite (carbonate of copper), | 4 “ |
| Sulphur | 15 “ |

Mix.

VIOLET FIRE, *burns slowly:*

| | |
|---|---|
| Chlorate of potassium | 51 parts. |
| Carbonate of calcium | 10 “ |
| Powdered malachite | 24 “ |
| Sulphur | 15 “ |

Mix.

---

CHOLERA MIXTURE (RUSCHENBERGER'S):

℞ Tincture of ginger.
Tincture of capsicum.
Spirit of peppermint.
Tincture of opium.

Of each equal parts by measure. Dose, a teaspoonful. Useful in acute diarrhœa, cholera morbus, cramping and griping of the bowels, etc.

HAMLIN'S CHOLERA MIXTURE:

| | |
|---|---|
| ℞ Tincture of opium | one ounce. |
| Tincture of camphor | “ |
| Tincture of rhubarb | two ounces. |

Mix.

ANOTHER FORMULA, *for cholera morbus, etc.:*

℞ Tinct. opium.
Tinct. capsicum.
Tinct. cardamom co.
Tinct. ginger.

Of each equal parts. Mix.

## CHIAN TURPENTINE IN CANCER.

Since the publication of Prof. Clay's paper in the London *Lancet*, May 9th, on the efficacy of Chian turpentine in the cure of cancer, an extraordinary demand for this drug has occurred and the price for what purports to be the genuine article has advanced to fabulous rates. Notwithstanding the excellence of the authority for the statements made in that remarkable paper, we have little or no confidence in the drug as a cancer remedy, and advise our friends to avoid purchasing a stock until its therapeutic value is more definitely established. In the mean time imitations and adulterated specimens are sure to make their appearance in the drug market. For the benefit of those who will be forced to procure the drug we have reprinted numerous extracts describing its properties and uses.

USEFUL DRUG CLERKS AT YOUR OWN PRICE.—We wish to remind our readers in this city and vicinity that on or about the fourth day of next October there will be in attendance at the College of Pharmacy a hundred or more students, many of whom will desire situations while attending lectures. These young men are quite uniformly polite, intelligent and enthusiastic devotees of their chosen profession, and are therefore much more desirable as assistants than those who are less ambitious. They take an interest in everything they do, and hence to them work is not drudgery. They are usually well contented with small wages, but we do not believe it to be good policy for employers to make too hard bargains with them in respect to compensation, simply because they often can do so. Pharmacists in the city and vicinity wishing this class of assistants, by sending their addresses to Mr. Thos. Whitfield, 240 Wabash avenue, will be enabled without expense to take their choice of the numerous applicants.

A CAREFUL DRUGGIST in Nebraska, who advertises "physicians' prescriptions carefully prepared," having ordered calomel of a Western jobber, wrote on receipt of the article as follows: "I sent for calomel and it is labeled hydrarg sub. mur. Now, I never saw calomel labeled that way, and did not want to use it until I heard from you." Probably that man would feel much aggrieved were any one to intimate that he has no right to attempt to fill a prescription or even to continue in the drug business without further education. This incident, recently related to us, reminds us of a similar one which occurred at Indianapolis a few years ago. A doctor in that city having concluded, as most young physicians are apt to do, that the druggists are at best but a horde of ignorant rascals, determined to dispense his own remedies. After trying various jobbing bouses, we were finally favored with a small order, which, among other articles, called for *oil* of turpentine. Unfortunately, our label read "Spts. Turpentine," and as usual the bill in its nomenclature conformed to the labels on the packages. In a few days a letter came back from the doctor, stating that he was much disappointed, after ordering oil of turpentine, to have the spirits sent him. He had been served the same shabby trick by several other dealers, so that his shelves were loaded with the vile stuff, for which he had no use. We wrote him that by simply changing the labels he would be able to transform all his spirits into genuine oil of turpentine.

ILLINOIS STATE PHARMACEUTICAL SOCIETY.—At the last meeting of the Board of Trustees of the Chicago College of Pharmacy a committee, composed of leading representatives of the jobbing and retail trade in this city, was appointed to take such preliminary steps as might seem advisable in the matter of issuing a call for a meeting of the druggists of the State, with a view to forming a State organization. Up to the hour of going to press this committee has not held a regular meeting; and therefore we are unable to give the result of their deliberation.

A GLUCOSE FACTORY BURNED.—The large glucose manufacturing establishment formerly owned by Mr. A. E. Ebert, now by Allerton, Voorhies & Pray, and located at the corner of Archer avenue and Wallace street, was totally destroyed by fire on the 17th of July. The loss is estimated at $90,000; insured for $56,000. The business will be continued.

NEW BIOGRAPHICAL DICTIONARY.—Prominent among the valuable features of the new edition of Webster's Unabridged Dictionary, just issued, is the "New Biographical Dictionary," comprising about 10,000 names of ancient and modern persons of renown, including many now living. It gives us the pronunciation of these names, the nationality, profession or occupation, date of birth, and if known, the date of death of each person. From its conciseness and accuracy it supplies a want long felt in this direction, and adds very greatly to the value of this always valuable work.

A WORTHY OBJECT.—The Chicago Drug Clerks' Association contemplate giving a lecture for the benefit of Mr. Fleischer, a graduate of the Chicago College of Pharmacy, who was recently so badly injured by a street car accident as to seriously disable him for life. We are sure that all will aid in this worthy enterprise. If each druggist in the city would sell but half a dozen tickets the sum realized by Mr. Fleischer would materially lessen his pains and brighten his prospects.

MEMBERSHIP IN THE AMERICAN PHARMACEUTICAL ASSOCIATION.—At the last meeting of this body, Mr. Robert Cowdrey, of 527 State street, and Mr. Geo. Schafer, of Fort Madison, Iowa, together with several other gentlemen, were appointed a committee to increase the membership of the association. Therefore, those in the West wishing to join the association would do well to address either of these gentlemen without delay.

IN a short time our readers in this city and vicinity will probably be asked to sign an invitation, by the druggists of this city, to the American Pharmaceutical Association to hold its meeting in 1881 in this city. We hope that all, whether members or not, will sign this request, as the meeting will be of great interest and service to the profession in the West.

CHICAGO COLEGE OF PHARMACY.—Lectures will commence in this institution on the fourth of October. Arrangements are being made by the Faculty and Board of Trustees to make this a very interesting and profitable term to the class. Those wishing announcements should address Mr. Thos. Whitfield, 240 Wabash avenue.

RETURN THE BOOKS.—Those having books belonging to the library of the Chicago College of Pharmacy are requested to return them immediately, in order that a revised catalogue may be made.

## PAMPHLETS RECEIVED.

Transactions of the Medical Society of the State of Tennessee.
Sympathetic Affections of the Eye. By Dr. J. C. Lundy, Detroit.
Diabetic Cataract Iritis, etc., by the same author.

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At the regular semi-annual meeting of the State Board of Pharmacy of Kentucky, held in the city of Louisville, July 8th, 1880, the following resolutions of respect to the memory of John J. Frost, its late President, were unanimously adopted:

Since the last meeting of this Board it has pleased an All-wise Providence to remove from our midst by death our worthy President, John J. Frost, of Lexington. The death of Mr. Frost, although not unexpected, is none the less painful to us as a Board and as individuals, and we deem it most fitting and proper at this time to attest the fidelity and ability, as well as the uniform courtesy and kindness with which he discharged all his duties as President of this Board, which office he filled continuously from its formation, in 1874, to the time of his death, which occurred in the city of Lexington on the first day of June last. Therefore, be it

*Resolved*—First: That in the death of John J. Frost the State Board of Pharmacy has lost a prudent, wise and faithful officer and counselor, the profession of pharmacy an accomplished and concientious member, and the community at large a valued citizen.

Second: That a certified copy of these proceedings be forwarded to the family of the deceased, with assurances of the sympathy of the members of this Board; also, that a copy of the same be entered upon the records of the Boàrd, and copies sent to the Secretaries of the American and Kentucky Pharmaceutical Associations.

Wm. H. Averill, *President.*
Vincent Davis, *Sec'y.*

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The taste of Epsom salt in solution is said to be effectually disguised by the addition of a few drops of the essence of peppermint or of spearmint.

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Contributions on all practical and scientific subjects are always welcome. Please do not wait to be specially asked to write for our pages.

# AMERICAN PHARMACEUTICAL ASSOCIATION.

## ANNOUNCEMENT.

The Twenty-eighth Annual meeting of the American Pharmaceutical Association will be held at Saratoga Springs, New York, on Tuesday, September 14th, 1880, at 3 o'clock P. M.

It is expected an important change in the business arrangements of the Association will be reported by the committee appointed for that purpose; several interesting papers will be presented. In view of the celebrity of the location of meeting an unusually large attendance is confidently expected.

Exhibitors are requested to correspond with the Local Secretary, Mr. Charles F. Fish, for any information connected with that department. Exhibitors should bear in mind that in order to secure an advantageous display their application for space should be made early, and the goods for the exhibit should be in the hands of the Local Secretary some days before the meeting.

It is desirable that the members of the Association render the committee upon membership as much aid as possible.

Chairmen of standing committees are requested to furnish a copy of their respective reports, together with a synopsis of the same to the Chairman of the Committee on Papers and Queries, Mr. J. U. Lloyd, Cincinnati, Ohio, as required by Article IX., Chapter VI., of the By-Laws.

In like manner, all persons writing papers for the Association, whether volunteer or in answer to a query, will report to the same chairman (see Article VIII., Chapter VI., By-Laws), and it is requested that such paper, with a synopsis of same, be in the hands of the same chairman before the opening of the first session.

Further information concerning the meeting and the arrangements made will be given in the circular of the Permanent Secretary, Prof. J. M. Maisch, No. 145 North Tenth street, Philadelphia.

GEORGE W. SLOAN,
*President.*

INDIANAPOLIS, June, 1880.

# VOLUMETRIC ANALYSIS OF LIQUIDS AND SOLIDS.

BY ALFRED B. TAYLOR.

Analysis is the separation of a compound into its several parts.

Qualitive analysis is the determination of the parts, without reference to quantities, while quantitive analysis determines also the quantities of the parts, thus showing their relative proportions.

Quantitive analysis by weight, or gravimetric analysis, consists in separating and accurately weighing the constituents of a compound.

The necessary operations are frequently very complicated, occupying a long time, and in many cases require elaborate apparatus, as also the exercise of much care and experimental knowledge.

Volumetric analysis, or quantitive analysis by measure, on the other hand, is quickly performed, as a general rule is susceptible of extreme accuracy, and needs much simpler apparatus. The leading principle of the method consists in submitting the substances to be estimated to certain characteristic reactions, employing for such reactions solutions of known strength, and from the volume of solution required for the production of such reaction determining the weight of the substance to be estimated, by aid of the known laws of chemical equivalence.

Suppose, for example, that it is desirable to know the quantity of pure silver contained in a "Bland dollar." The coin is first dissolved in pure nitric acid, by which means a bluish solution, containing silver, copper, and probably other metals, is obtained. It is known that chlorine combines with silver, forming a chloride of silver, which is insoluble in dilute nitric acid. The proportions in which the combination takes place are the atomatic weights of the two substances, or 35.5 parts of chlorine to every 108 parts of silver; consequently, if a solution of pure chloride of sodium be prepared by dissolving in water such a weight of the salt as will be equivalent to 35.5 grains of chlorine= 58.5 grains of chloride of sodium (its moleculer weight), and the solution be diluted to the measure of 1,000 grains of distilled water, every single grain-measure (or one-thousandth part) of this solution, upon being carefully added to the silver solution, will combine with 0.108 grain of pure silver to form chloride of silver, which, being insoluble, will be precipitated. In the process of adding the salt solution to the silver, drop by drop, a point is at last reached when the precipitate ceases to form, thus showing that all the silver has been separated from the solution. Upon carefully examining the graduated vessel from which the salt solution has been used it at once becomes apparent how many grain-measures of liquid have been necessary to produce complete decomposition, and to obtain the answer to the problem is a simple matter of calculation.

For instance, suppose the quantity used to completely decompose the one-tenth part of the solution of silver was 343 grain-measures; this number multiplied by 0.108 (the amount of silver thrown down by each grain-measure of the salt solution) will give the exact number of grains of pure silver contained in one-tenth of a dollar=37.+grains, or 371.25 grains of pure silver in the dollar.

The metric system of weights and measures is now used exclusively (for scientific purposes) in France, Prussia, Austria, Holland, Sweden, Denmark, Belgium and Spain, the unit of weight being the gram (=15.43235 grains troy); a gram of distilled water at 4°C. (39°F.) measures exactly a cubic centimeter or a "fluigram"; the kilogram contains 1,000 grams; the liter contains 1,000 fluigrams.

The following apparatus is required in the preparation and use of the necessary solutions:

1. A glass flask, which, when filled to a mark on the neck, contains one liter.

2. A graduated cylindrical jar, which, when filled to 0, contains one liter, and is divided into one hundred equal parts.

3. A burette, a graduated tube which, when filled to 0, holds one hundred fluigrams, and is divided into one hundred equal parts.

When volumetric analysis first came into use the test solutions were generally prepared so that each substance to be tested had its own special reagent, and the strength of the standard solution was so calculated as to give the result in percentages; consequently, in alkalimetry, a distinct standard acid was used for soda, another for potash, a third for ammonia, and so on, necessitating a great variety of standard solutions.

Griffin and Ure appear to have been the first to suggest the use of standard test solutions based on the atomatic system.

Normal test solutions, as a general rule, are prepared so that one liter at 16°C. shall contain the hydrogen equivalent of the active reagent weighed in grams (H=1).

Decinormal solutions are made one-tenth, and centinormal solutions one-hundredth, of this strength.

In the case of univalent substances, such as silver, iodine, hydrochloric acid, sodium, etc., the equivalent and the atomic (or in the case of salts, molecular) weights are identical; thus a normal solution of hydrochloric acid must contain 36.5 grams of the acid in a liter of fluid, and a normal solution of sodic hydrate, 40 grams.

In the case of bivalent substances, such as lead, calcium, oxalic acid, sulphurous acid, etc., the equivalent is one-half of the atomic (or in the case of salts, molecular) weight; thus a normal solution of oxalic acid would contain $\frac{126}{2}$ or 63 grams of the acid in a liter of fluid.

Further, in the case of trivalent substances, such as phosphoric acid, a normal solution of soda phosphate would be made by dissolving $\frac{358}{3}$ $=119.3$ grams of the salt in distilled water, and diluting the liquid to the measure of one liter.

The following standard test solutions have been recommended to be introduced into the United States Pharmacopœia, the same being now official in the British Pharmacopœia:

### 1. *Volumetric Solution of Bichromate of Potassium.*

$(K_2Cr_2O_7 = 295)$.

This is a decinormal solution, and contains 4.917 grams of the salt in one liter of the liquid.

The reaction which takes place between potassic bichromate and ferrous oxide is as follows:

$$6FeO+K_2Cr_2O_7 = 3Fe_2O_3+Cr_2O_3+K_2O.$$

It is therefore necessary that one-sixth of an equivalent in grams should be used in a liter for the normal solution, and one-sixtieth for the decinormal; and as it is preferable on many accounts to use a dilute solution, the latter is the more convenient for general purposes.

### 2. *Volumetric Solution of Hyposulphite of Sodium.*

$Na_2S_2O_3, 5H_2O = 248$.

The normal solution contains 248 grams in the liter; the decinormal solution is usually more convenient, and contains one-tenth as much, or 24.8 grams in the liter, while in some cases the centinormal solution is desirable. This can readily be prepared by diluting 100 fluigrams of the decinormal solution to one liter.

### 3. *Volumetric Solution of Iodine.* I = 127.

The solution directed in the Pharmacopœia is the decinormal solution, which contains 12.7 grams of iodine in the liter.

### 4. *Volumetric Solution of Nitrate of Silver.*

$Ag.NO_3 = 170$.

The solution is also the decinormal solution, and contains 17 grams of nitrate of silver (corresponding to 10.8 grams of pure silver) in one liter of liquid.

### 5. *Volumetric Solution of Oxalic Acid.*

$H_2C_2O_4, 2H_2O = 126$.

Oxalic acid being bivalent, the normal solution is made by dissolving $\frac{126}{2} = 63$ grams of the acid in a sufficient quantity of water to make the solution measure one liter.

### *Volumetric Solution of Soda.*

$NaHO = 40$.

This is a normal solution, and contains 40 grams of sodic hydrate in one liter of liquid.

Might not the process of volumetric analysis be much simplified, and especially in view of the abandonment of measures of capacity by the U. S. Pharmacopœia, would it not be more in accordance with the plan of the work, if measures of capacity were abandoned here also?

True, the process would no longer be volumetric, but the leading principle upon which the system is based would still remain.

It is proposed, then, that all test solutions should be made gravimetric instead of volumetric; that is to say, repeating, for example, the process of testing the amount of silver in a Bland dollar, the standard solution of chloride of sodium would be prepared by dissolving 58.5 grains of chloride of sodium in distilled water, and diluting the solution until it weighed 1,000 grains, instead of measuring 1,000 grain-measures, as before. In this case every grain (weight) of this solution, upon being added to the silver solution, will combine the 0.108 grain of pure silver, and no further observation is necessary than to note how many grains of the salt solution have been used. This plan would do away with all apparatus; the only instruments necessary to carry it out would be flasks or appropriate vessels in which to weigh the solutions, and an accurate set of scales and weights to weigh them.

Variations in temperature would not affect the results, and inasmuch as weighing can be done with more exactness than measuring, greater accuracy would be obtained.

This plan would be equally satisfactory with any system of weights, whether the British system or the metric system, or simply parts by weight, were used.

This same principle applied to all the test solutions would, in my opinion, render the operation more easy of execution, retaining all the advantages and discarding some disadvantages of the present system.

The principal facts herewith presented have been derived from "The Systematic Hand-book of Volumetric Analysis," by Francis Sutton, F. C. S., published London, 1876, to which the reader is referred for further information on the subject.—*Amer. Jour. Phar.*

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## THE PHARMACOPŒIA OF THE U. S. OF A. FOR 1880.

BY D. WEBSTER PRENTISS, M.D.

Prof. of Mat. Med. and Therap., Nat. Med. Coll. of Washington, D. C.

It is proposed in this paper to discuss the Revision of the Pharmacopœia from the standpoint of the physician. From this aspect, the Pharmacopœia may be divided into three sections:

1. Embracing those matters in which *physicians* are most interested, and which it is their province principally to direct, such as what drugs shall go into the Pharmacopœia; and the doses, or, in other words, the strength of preparations.

2. That portion in which pharmacists are most interested, and which should be mainly left to them. As, for instance, the construction of formulæ and directions for their manipulation.

3. The intermediate ground on which both physicians and pharmacists meet with equal interest, as in the questions of introducing matters of therapeutics and toxicology, and in the use of parts by weight, instead of the old standards of troy and apothecaries' weights and liquid measures. All those subjects which pertain to pharmacy alone I will pass over, leaving them to the pharmacists.

As to introducing into the Pharmacopœia information in regard to doses, therapeutics and toxicology, the Convention instructed the committee adversely.

One of the most important questions decided by the Convention, and one which gave rise to the most animated discussion, was on the adoption of parts by weight in the formulæ. The adoption of parts by weight in the centesimal ratio is a decided step forward in the direction of scientific advancement, and will be of great service to the physician, in giving him, at a glance, the strength of any preparation.

If the total number of parts in a formula be 100, the number of parts of each ingredient is the percentage of that ingredient. The percentage therefore of the active agent is indicated at a glance.

Under the old arrangement of formulæ, where no definite amount is required in the completed preparations, and where several units, as grains, drachms, ounces and pints, are used, a calculation by arithmetic is necessary to arrive at the required proportion of strength. The physician is compelled either to memorize the strength or to make such calculation each time such knowledge is required. The adoption of parts by weight in the per cent. ratio is also a triumph for the metric system, which does not perhaps appear at first sight.

It requires a single unit of weight. What so convenient and desirable as the gram?

It calls for a centesimal or decimal system. Where can this be found but in the metric system?

Of those matters in which physicians have most interest, and which it is specially their province to direct, the most important are: What preparations shall be made official? and What shall be the strength of preparations? The discussion of these two propositions is the main object of this paper.

It is not proposed to discuss this or that drug individually, so much as to treat of general principles which should serve as a guide, and endeavor to establish the propriety of adopting as far as possible a uniform classification.

In regard to the first proposition, what preparations shall be made official?

It should be laid down as a general rule that "*no formulæ should be made official which can just as well be ordered by the physician on extemporaneous prescription, and which must be compounded at the time by the pharmacist.*"

The Pharmacopœia is not a book of *prescriptions*, nor is it intended to supply the place of a *formulary*. It is not supposed to save physicians the trouble of writing prescriptions.

It is a recognized principle of prescribing that the prescription should be adapted to the requirement of the case, and nothing is more unscientific or more to be deprecated than routine prescribing. It is undoubtedly to the advantage of both physician and patient that the recipe should be thought out, and its strength gauged to the needs of the case in hand. On this principle many preparations, at present official, should be dropped and left to *extempore* prescription. The majority of such preparations are to be found among the suppositories, solutions, ointments, decoctions and infusions.

Let us, by way of illustration, look at the suppositories. These are nine in number:

| | |
|---|---|
| Suppos. Acidi Carbolici. | Carbol. a., gr. 1.<br>Cacao butter, ad gr. 30. |
| Suppos. Acidi Tannici... | Tannin, gr. 5.<br>Cacao butter, ad gr. 30. |
| Suppos. Aloes............ | Aloes, gr. v.<br>Cacao butter, ad gr. 30. |
| Suppos. Asafœt........... | Tr. asafœt., ʒ ⅜.<br>Cacao butter, ad gr. 30. |
| Supp. Belladonnæ........ | Ext. bellad., gr. ½.<br>Cacao butter, ad gr. 30. |
| Suppos. Morphiæ......... | Morph. sul., gr. ss.<br>Cacao butter, ad gr. 30. |
| Suppos. Opii............... | Opium ext., gr. 1.<br>Cacao butter, gr. 30. |
| Suppos. Plumbi........... | Acet. lead, gr. 3.<br>Cacao butter, gr. 30. |
| Suppos. Opii et Plumbi. | Acet. lead, gr. 3.<br>Opium ext., gr. ½.<br>Cacao butter, gr. 30. |

Here are nine totally unnecessary preparations. They are all simple prescriptions of only two or three ingredients requiring no special directions. The convenience of having them on hand even cannot be pleaded, for they are perishable preparations that must be compounded just as ordered. These are negative objections. A positive objection may be urged against some of them, as in the case of suppos. morphiæ. The dose of morphia in each is 0.03 (gr. ½), and in the instance of delicate females might readily produce dangerous symptoms. Besides all this, the official suppositories are not used by the profession. I have been informed by the druggist doing the largest prescription business in Washington, D. C., that he has never put up a recipe for an official suppository.

In speaking of the subject with a prominent physician, who is a college professor and a hospital physician, he said he never knew that suppositories were official before. I dwell upon this point to show the absurdity of placing such preparations in the Pharmacopœia. It burdens the mind of the student with useless rubbish, for he feels compelled to learn their proportions. After graduation he never thinks of them again, or, if he uses them, is quite as likely to overdose his patient as not.

In the same category we would class

$$\text{Liq. Morph. Sul..........}\left\{\begin{array}{l}\text{Morph. s., gr. i.}\\ \text{Water, f. ℥ i.}\end{array}\right.$$

There is no necessity of encumbering the Pharmacopœia with any such preparation; besides, there are two other distinct objections to this solution, one of which is that there are two other solutions of morphia in common use in some parts of the country, one of which (Magendie's, gr. 2 to f. ʒ i.) is more frequently used than the official. Fatal mistakes have occurred from the confusion. It is authentically reported of Prof. Bache, who introduced liq. morph. sul. into the Pharmacopœia, shortly afterward being in New York City, ordered for himself a prescription of this solution, and the pharmacist compounded Magendie's solution. Dr. Bache took a teaspoonful of the solution and nearly lost his life in consequence. The other positive objection is that no solution of an alkaloid will keep unchanged. It is decomposed by the development in it of bacteria.

These same objections apply to the solutions of *atropia* and *aconitia*, which it is proposed to introduce into the Pharmacopœia of 1880. Such powerful drugs had better be prescribed as required and of the strength desired.

There are many other preparations included in the present list which come under the same category, but I think enough has been said to illustrate my meaning and prove the correctness of the position taken, that *simple prescriptions* should not be made official.

The second question which we propose to discuss is as to the *strength* of preparations.

This is the most important matter in which physicians are alone interested—in which they justly claim the right to direct. It is the question of doses—to my mind, a topic of far greater importance than is generally supposed. We have become accustomed to the present heterogeneous and utterly unsystematic arrangement of formulæ in this regard, and are inclined to accept them as established facts—which it would be very inconvenient and perhaps dangerous to alter. *Inconvenient*, because it would necessitate on the part of the physician, to a large extent, the learning of doses over again; and possibly *dangerous* from the occurrence of mistakes. Upon closer inspections these drawbacks disappear.

There should, most certainly, be some attempt made, in the present edition of the Pharmacopœia, to render the strength of preparations more uniform, to base it as far as possible upon some established rule. This is already the case in a large and increasingly useful class of preparations—the *Fluid Extracts*. One needs not to ask the strength of a fluid extract, whether it be official or unofficial.

We know that it represents weight for weight of the drug from which it is made. No act of memorizing is here necessary after the dose of the crude drug is once learned.

What good reason is there why a similar law of uniformity should not be applied to other liquid preparations, as tinctures, wines and vinegars? I say there is no good reason except the inconvenience of changing doses; and the great advantage to be gained far outbalances this. The wonder is indeed that they were not so made uniform in the first place, instead of leaving the strength arbitrary. There seems to have been an effort in making the tinctures uniform as to dose, at a teaspoonful, but the number of exceptions are so great (19 out of 58) as to almost entirely defeat the usefulness of such an arrangement.

Uniformity of doses has been suggested, and would undoubtedly be a great improvement on the present *no-system*, but uniformity of strength is more scientific, and more desirable as referring constantly in a definite ratio to the original drug. To make the *dose* the standard is to give an individuality to the preparation which is not advisable; the individuality should only rest on the drug itself.

The desirability of uniformity is recognized to a limited degree in the instructions to the Committee on Revision adopted in the late Convention, in the following paragraph:

"All such tinctures, wines, etc., in which a slight variation of dose is of no importance, are to be made as nearly as possible of a uniform percentage strength; that is, *one* part of the drug is to be made into *five* parts of tincture, or into *ten* parts of tincture, as the case may be."

This is in effect the suggestion made by Mr. Rice, in his report, but does not, in my opinion, go far enough.

None doubt the propriety and convenience of making fluid extracts uniform in strength, and the same reasons apply to other liquid preparations with equal force. The only difference is, that a distinct and arbitrary strength has already been adopted, and a new standard would involve the inconvenience of change.

The most important objections to the present arrangement of the Pharmacopœia, from the physician's standpoint, are want of system and the difficulty of carrying in the mind the strength of preparations. This is most noticeable to the student of medicine, who is appalled by the long list of arbitrary doses he is forced to learn.

To the student, in consequence, *materia medica* is the bugbear of the curriculum, and much valuable time is lost in pure memorizing that had better be given to the principles of therapeutics. It is undoubtedly a great waste of mental energy to learn and carry in the memory through life such an array of disconnected facts, when by proper systematizing it would be rendered unnecessary. There is so much more to learn in every department of medical science than there was twenty or thirty years ago that we cannot afford to waste time in useless mental labor.

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## PRESERVATION OF HOPS.

The principal feature in this new system consists in sprinkling the hops with alcohol prior to packing, and then pressing them tightly into air-tight vessels. In course of time the alcohol combines with some of the constituents of the hop, and certain volatile ethers are thus formed; these possess a strong and peculiar fruity smell, but being very volatile, they are all dissipated during the boiling. Dr. Lintner has experimented on these preserved hops, at Weihenstephan, and speaks well of them; he says the fine color is retained and there is a full development of aroma; the fermentation of worts made with these hops worked well, and the resulting beer possessed a fine bitter flavor. If this method of sprinkling with alcohol will stop the development of valerianic acid, which takes place in hops when stored in the usual manner, it ought to come into general use.—*Scientific American.*

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## THE THERAPEUTIC VALUE OF THE IODIDE OF ETHYL.

BY ROBERT M. LAWRENCE, M.D., BOSTON.

The iodide of ethyl or hydriodic ether, $C_2H_5I$, may be prepared by careful distillation of a mixture containing ten parts of iodine, five parts of absolute alcohol and one part of phosphorus. It is normally colorless, but on exposure to light becomes a reddish brown, owing to the separation of the iodine and ethyl, the decomposition taking place slowly in diffused daylight, quickly in sunshine. Its odor is like that of chloroform, its taste sweetish. It is soluble in alcohol, but not in water. It has no acid reaction, is non-inflammable, and boils at 158° F. (70° C.).

Its specific gravity is 1.93 at 59° F. (15° C.).

Although discovered by Gay-Lussac in 1815, it does not appear to have been proposed as a medicinal agent until 1850, when M. Huette made some experiments with the object of determining its value as a remedy in phthisical dyspnœa.

Influenced by his favorable report, Dr. Turnbull, of Liverpool, employed it in chronic pulmonary affections. In an address before the British Medical Association, he remarked that iodine had often been tried in this class of diseases, but that its use had been abandoned on account of its irritating effects. In order to give it by inhalation, it was desirable to find a compound possessing the requisite volatility and absence of irritating qualities, and he considered the iodide of ethyl to be such a compound.

However, the drug was soon forgotten, and was unheard of for nearly twenty-five years, until attention was directed to it by Professor See, of Paris, who, after employing it in a number of cases attended with dyspnœa, reported that he had found it very efficient in relieving that symptom. In 1879, Dr. Thorowgood made use of it in several cases of asthma, at the Victoria Park Hospital, in London, with good results. The writer has carefully studied its effects, having employed it systematically during the past fifteen months.

The drug may be administered as follows:

Having moistened a handkerchief with eight or ten drops, let the patient inhale the vapor therefrom. As soon as he shall have acquired confidence, let the inhalations be made directly from a small vial containing half a drachm of the drug, and applied to the nostrils. Let the inhalations be continued for ten minutes at a time, thrice daily or oftener. Should slight nervous symptoms, due to the primary exhilarating effects of the ether, supervene, the inhalations may be discontinued for some seconds, and then resumed. By this method, the system is kept constantly impregnated with iodine.

After frequent personal experiments, and observation of its effects on others, the writer feels warranted in making the following statement: Ethyl iodide has no depressing effect on any of the functions. It is a mild invigorant, and its primary action resembles that of sulphuric ether, while it differs from the latter in that it has no anæsthetic properties.

A very brief time is required for its absorption. The iodine is taken up by the respiratory mucous membrane, and is conveyed by the bronchial and pulmonary veins directly to the left auricle, and thence into the arterial circulation. It has been detected in the urine in ten minutes after the inhalations. The writer has found it in urine voided at the following intervals: forty-five minutes; one, seven, eighteen, twenty-four, thirty hours.

Its physiological action is thus described by M. Huette: "After some inhalations, an impression of calmness and satisfaction announces that the hydriodic ether acts at first in conformity with the other ethers employed in medicine. The respiratory motions are carried on with a readiness and fullness advantageous to the circulation. But the antispasmodic action of the ethereal vapor, which favors the absorption of the remedy, is soon followed by the influence of the absorbed iodine. The increase of vigor ceasing to be limited to the thoracic muscles, extends to the whole muscular system. The appetite is developed, the secretions are increased, the pulse acquires fullness, and the vivacity of the feelings and the activity of the intellect prove that the impulse given to the other organs extends to the brain also."

## USEFUL SUBSTITUTES.

One of the most noticeable features of modern time is the immense progress which has been made, and the manufacturing ingenuity and the scientific skill displayed, in finding substitutes for the expensive or scarce raw materials and articles in general demand. The fact is apparent beyond question, that art is fast invading the domain of nature. Chemistry is enabling us to replace animal and vegetable dyes, and to form artificial gems, or creditable imitations; mineral oils replace animal and vegetable ones for illuminating purposes, and the electric light is treading upon the heels of gas.

Celluloid is one of those useful inventions of recent origin which has become a substitute for many natural raw materials. It is a species of solidified collodion produced by dissolving gun-cotton in camphor with the aid of heat and pressure. The applications of celluloid are now legion. As a substitute for ivory it is best known, and so perfect is the resemblance that a close inspection is required to distinguish the counterfeit from the genuine; the absence of the grain, or decussation, is the chief distinction. Celluloid possesses not only all the strength and elasticity of ivory, but it does not warp nor discolor with age.

Beautiful fancy ornaments are made of artificial tortoise-shell, which is formed by melting gelatine at a moderate temperature, with a small amount of metallic salts, running the whole into moulds, and staining the mass with hydrosulphate of ammonia, so as to produce an imitation of the grain of natural tortoise-shell. The appearance of tortoise-shell may also be given to horn by brushing it over with a paste made of two parts of lime and a little soda lye, which is allowed to dry. This forms sulphate of lime with the sulphur contained in the albumen of the horn, and produces dark spots, which contrasts with the lighter colors of the horn.

The manufacture of imitations of precious stones has long been an important industry in France, but it has increased enormously of late years, on account of the perfection attained in the art; and at present the supply cannot keep pace with the demand for fictitious gems. A revolution has been brought about lately in the manufacture of artificial diamonds by substituting a preparation of gold for the oxide of lead in making the strass; and further, the stones, when cut, are subjected to a chemical process by which the refractive power is made equal to that of diamonds of the purest water. These perfect stones attracted great attention in the last Paris Exhibition, where they were exposed side by side, and in the same cases, with real diamonds of great price. Whether the latter can ever be artificially made on an extensive scale is still a matter of dispute, although its possibility is claimed. Any man can convert a diamond into charcoal, but it is not so easy to turn charcoal into diamonds. The recent claim of Mr. Mactear, of Glasgow, to have crystallized carbon is acknowledged, but the diamonds produced are as yet too minute to affect the value of natural ones.

Within the last six or seven years a complete revolution has taken place in the substitution of artificial alizarine for the natural alizarine of madder. The culture of this dye-root has almost been abandoned now in the producing countries where it was formerly grown. The product from an agricultural industry which yielded over £2,000,000 in value has been entirely replaced by a chemical.

As a dye, alizarine is now, at most, not more than one-third of the average price of madder in former years. The "green grease," one of the last portions of the distillation of coal tar, was formerly an impurity, and valueless; instead of being thrown in the gutter, this by-product has become a valuable commodity, which has largely benefited our gas works, England being the great tar producing country. The new color obtained from it does away, too, with the necessity of separately mordanting the fabric to be dyed.

From the light coal-tar oils a whole series of aniline colors, of formerly unknown shades, have sprung up, exceeding in value £2,000,000 sterling annually. The estimated value of the production of coal-tar colors, here and on the continent, is about £3,250,000, and this industry has placed at the disposal of commerce products which, but for chemical research, could never have been obtained.

Ultramarine is another color which has made remarkable progress, although it is not a recent substitute, its manufacture dating from 1328, when it was discovered by Guinet.

In 1820 the blue prepared from lapis-lazuli cost £80 the pound; now the yearly production of ultramarine in Europe (chiefly in Germany and France) is over 22,000,000 lbs., sold at less than 1s. the pound.

A cheap substitute for silver has been found in aluminium, made from bauxite, at a cost of 20s. the pound.

The manufacture of oleomargarine, or artificial butter, has already reached the status of an important industry, both in America and on the Continent. The production of oleomargarine is carried on on an extensive scale in large establishments, where great quantities of fat can, by special machinery, be treated cheaply and with uniform results, while the churning of the oil with the milk, and the subsequent processes necessary for its conversion into butter, are the work of numerous small factories.

The Commercial Manufacturing Company of New York converts daily about 1,000,000 lbs. of fat into oil. Fat of all kinds is utilized, provided that it is perfectly sweet and clean.

A fair test between oleomargarine and fresh genuine butter is that the latter appears under the microscope composed of ovoid granules, and contains no crystals. The artificial butter obtained from tallow, on the contrary, contains crystals, and does not melt at once to a clear oil, but fuses gradually, a whitish "sauce" being first formed.

Besides the use of eleomargarine for the manufacture of artificial butter, it finds another extensive channel in the manufacture of cheese, being added to skim milk and rennet. The cheese produced is said to be palatable, and to make a healthful article of food.

Careful thought and ingenuity are always on the search to utilize waste products and to find substitutes. For instance, there is a large demand for eggs for various manufacturing purposes—for glace leather in glove-making, bookbinding, photographing, calico printing, clarifying liquors, etc., in the form of albumen, and the yolk of the egg, etc.

Large premiums have been offered for a good substitute for egg albumen, but no really efficient substance has yet been discovered. In glove-making a mucilage obtained from the root of the marsh-mallow has been tried. Some manufacturing processes require the white of the egg, some the yolk; at least four eggs are required to clarify every barrel of wine; and when the production of wine in France and other continental States is considered, the demand becomes extensive, reaching hundreds of millions of eggs. Some of the seaweed isinglass might certainly be used for this purpose.

There is no end to artificial productions, and the list might be extended indefinitely, including artificial ice, which renders us independent of King Frost; artificial sugar, which we can make from starch or rags; artificial fruit essences, artificial horn from seaweed, artificial wood from compressed sawdust or straw, artificial leather from old scraps or the leather cloth, artificial parchment from paper chemically treated with sulphuric acid, and, as hides for leather become more and more in demand, we have come to utilize the formerly neglected skins of the alligators, the snakes, the kangaroos, the porpoise, and other sea mammals and fishes.—*Extracts from article by* P. L. SIMMONDS, *in the British Trade Journal.*

## INTERDEPENDENCE OF ANIMALS AND PLANTS.

The *Gardeners' Chronicle* gives an engraving of a very remarkable pitcher plant, new to cultivation, but described by Dr. Hooker, a few years ago, from dried specimens collected in Borneo by Low and others. The large bag-shaped pitchers are, when fully developed, provided with two sharply toothed wings. The neck of the pitcher is thrown into ridges with intervening furrows, and is prolonged at the back into an erect, or slightly incurved process, terminating in two sharp recurved spurs, the whole reminding one of the head of a snake uplifted and ready to strike with its fangs. At a recent meeting of the Linnæan Society, Mr. Burbridge, an observant naturalist, read a paper on the subject, which throws some light on the curious organization in question, and is of considerable interest as illustrating the solidarity of the organic world. It seems that the stalk of the lower bag, or ampulla-shaped pitcher, is swollen and hollow, and in their native country most of them are perforated by a species of black ant, which forms its colonies in the old and dry pitcher, and continually visits the fresh ones, so far as can be determined, for the purpose of obtaining food and water, since these fresh pitchers contain a miscellaneous collection of dead and decaying insects of many kinds. As these pitchers are perfect traps to creeping insects of ant-like character, by reason of the incurved ridges round the throat of the picture, these black ants ingeniously perforate the stalk, and so obtain their supplies, and provide a means of exit in case of need. Now as to the uses of the formidable spurs which lie concealed under the kidney-shaped lid of the pitchers: There is found in the Bornean forests, where this fine pitcher plant grows, a curious little animal called by the natives "Tamperlilie," and by the few Europeans who have ever seen it alive, the "Spectre Tarsier" (*Tarsier Spectrum*). It is a most singular and interesting creature, about the size of a rat.

Its head is singularly like that of a small kitten; the eyes are large and full, the body is monkey-like, and the tail slender and as long as the body, but bushy at the tip like that of the lion. Its feet have curiously enlarged disk-like tips, reminding one of the enlarged ends of the climbing tendrils of the Virginia creeper. This little animal is an insect-eater, and knowing that the pitchers contain entrapped insects, visits them pretty regularly. In the case of some of the pitcher plants the insects imprisoned in their unarmed urns are readily removed, but not so in the species under consideration, as the sharp spurs are so placed that the tarsier is sure to be pricked by them, and quite sharply too, if its head is inserted under the lid for getting at the interior. The main question, and the one yet to be solved, is, of what use are the living ants, and what end is this one species of *Nepenthes* made to serve as the nest of a peculiar species of these insects. To suit its requirements not only is its very structure modified, but especial precautions are taken to ward off the insect-eating tarsier. The use of the entrapped insects we already know, for it has been demonstrated by Dr. Hooker that the pitchers of *Nepenthes* not only allure insects by a sweet secretion at the rim and upon the lid of the cup, but also that their capture, or the presence of other partly soluble animal matter, produces an increase and an acidulation of the contained watery liquid, which thereupon becomes capable of acting like gastric juice in dissolving flesh, albumen, and the like. In other words, these pitchers seem to be stomachs. Borneo is indeed a land of many wonders. Dr. Beccari has found there a curious plant (*Myrmecodia*) which never fully develops until bitten by a large red ant. They make their nest in the swollen stem, and thence rush out to repel all invaders. Dr. Beccari asserts that the presence of these ants is absolutely essential to the plant's existence, for unless the young plants are thus attacked they soon perish.—*Scientific American.*

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JABORANDI.—The brown color which in coca leaves indicates inferiority denotes here the very opposite property. The genuine leaves, derived from *Pilocarpus pinnatifolius*, Lem., nat. fam. Rutaceæ, exported from Pernambuco and Para, and rich in pilocarpine, are preferred, if of a brownish color, and even with the stems attached, to the finely green, stemless leaves which are exported from the province of Matto Grosso, in Southern Brazil. Regarding the latter, it is yet doubtful whether they contain any pilocarpine, and whether they are derived from the false jaborandi (fr. *Serronia Jaborandi*, Gaudichaud, nat. fam. Piperaceæ), or from another genus of Rutaceæ, which seems more probable.—*Report of Gehe & Co.*

## SILVERING BY COLD RUBBING.

Make paste by thoroughly grinding in a porcelain mortar, out of the light,

| | |
|---|---|
| Water | 3 to 5 oz. |
| Chloride of silver | 7 oz. |
| Potassium oxalate | 10½ oz. |
| Salt (common table) | 15 oz. |
| Sal ammoniac | 3¾ oz. |

Or,

| | |
|---|---|
| Chloride of silver | 3½ oz. |
| Cream of tartar | 7 oz. |
| Salt (common) | 10½ oz. |
| Water, to form a paste. | |

Keep in a covered vessel away from the light. Apply with a cork or brush to clean the metallic (copper) surface, and allow the paste to dry. When rinsed in cold water the silver presents a fine frosted appearance, the brightness of which may be increased by a few seconds' immersion in dilute sulphuric acid or solution of potassium cyanide. The silvering bears the action of the wire brush and of the burnishing tool very well, and may also be "oxidized." Should a first silvering not be found sufficiently durable after scratch brushing a second or third coat may be applied. This silvering is not so adhering or white on pure copper as upon a gilt surface.

For the reflectors of lanterns the paste is rubbed upon the reflector with a fine linen pad; then, with another rag, a thin paste of Spanish white or similar substance is spread over the reflector and left to dry. Rubbing with a fine clean linen rag restores the luster and whiteness of the silvered surface.

The paste is sometimes mixed directly with the whiting and left to dry, or until nearly dry, then rubbed down as described.—*Scientific American.*

## NARRATIVE OF A LONDON STREET DOCTOR.

When I first started I worked Woolwich with my "miraculous nine oils." Men who work at heavy lifting and hauling, and are likely to get strains and ricks of the back, have a superstitious belief in the "nine oils." It is the same wherever you go. What are they? What, the original nine? Blessed if I know, nor they don't know either. But that don't make any difference. I used to give 'em one—sperm oil—and call it the nine. It went down wonderful round about the docks and at the gate of the arsenal, when there would be, p'r'aps, a couple of thousand men going in and out of the gate night and morning and at dinner-times. I was working at the ladies' shoemaking before that, along with another young fellow, and being out of work we started the street doctoring business. My mate had been in the theatrical scene painting line, and could picture a bit on canvas. He painted a back scene for the stall, representing "Before" and "After." Half the painting was a lot of poor fellows looking dreadful bad, some of 'em with their arms in a sling, and some with their legs bandaged, and some with crutches and sticks, all of 'em having been sprained or overstrained themselves at their heavy work, and they were being turned away from the gates of the hospital, and writ under 'em were the words "Discharged incurable." The other half of the painting showed a sort of a angel coming down and showering on 'em out of a bottle a regler drencher of the "nine oils," and there they was a-tearing off their slings, and chucking their sticks away, and waving their crutches, and hooraying. This, besides the board and trestles, and a lot of doctors' bottles with sperm oil in 'em, was all we hed to start with. When I say we, I was the principal, being more genteel-looking and having the gift of the gab. We hit on an idea to give the thing a start. The first day I made a pitch near the docks; it was Monday dinner-time, and there was soon a crowd round the picture, most of 'em chaffing it, and me too, while I kept on pattering serious about having just come from America, after giving a man who had found out the virtues of the miraculous oils, and who was making a rapid fortune, a thousand dollars for the secret, on condition that I wouldn't work it till I got to England. It was sixpence a bottle, but I didn't sell one of 'em and I didn't expect to yet a while.

But when the crowd was thickest there come up to the outside edge of it a poor fellow looken' terrible ill, and with one arm out of his jacket sleeve. He began to abuse me most awful for trying to swindle poor afflicted people out of their money. "Here's a chance for you!" he cried out. "If your nine oils can do such wonders, try 'em on my shoulder. I've been laid up with a sprain in it these nine weeks, and haven't done a stroke o' work. Cure me. I haven't got any money, but I'll give you the jacket off my back." "My poor fellow," says I, "I can't promise to set you right on the spot, but step up here, and I'll try what I can do for you." And the crowd made way for him, and up he came. I helped him off with his shirt, and there was his shoulder and back with a blue and green bruise as large as the crown of my hat. I rubbed away at him for about five minutes with my oils, the crowd each minute growing greater, and then says I, "Now tell the people, free and fair, how you feel after it!" He tried to, but his feelings were too much for him. He worked his bad arm like a windmill for a minute or so, so as to show that I had quite cured it, and then he picked up his jacket, and handed it to me, saying, "Take it, and welcome, and I wish, for your sake, the pockets of it were full of golden coin." It was a telling bit, I can assure you; but when I handed him back his jacket, and half a crown with it, and shook hands with him, you might have heard the hooraying a couple of streets off. I sold every bottle I had in less than five minutes, and had to promise to be there again next day with a fresh supply. I needn't tell you it was my mate who acted the man with the sprained shoulder. We did wonderfully well. Day after day, for months, I used to take about fifty shillings, and it was more than three-quarters profit. And it might have gone on, but for my mate taking to drink, and growing too lazy to do anything in the business.

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CORNERING OPIUM.—*New York, July* 10.—It is confidently stated that five capitalists of this city, representing a capital of about $75,000,000, have formed a combination for the purpose of "cornering" the price of opium, and controlling the price of the drug. It is estimated that the growing crop will not amount to over 1,800 cases, and, as the world's yearly consumption amounts to some 6,000, an immense profit is anticipated by the syndicate. The price in this city now is

$6.50 per pound, duty paid, the duty amounting to $1 per pound. This is considered very low. The syndicate has purchased largely of the present supply, and has its agents scattered in the producing districts of the far East making contracts for the growing crop. The foreign manufacturers of morphine, especially those who use the drug in large quantities, are said to be uneasy over the prospect. Mr. Dutihl, President of the Orient Marine and Inland Mutual Insurance Company, a native of Smyrna, and who was formerly in the opium trade, is reported to be the head of the combination.—*Tribune.*

## PHYSICAL PROPERTIES OF CHIAN TURPENTINE.

In reference to the matter of the purity of Chian turpentine, we hear that considerable Venice turpentine has been sold under the name of "Chian" at a very high price. We republish from the *Lancet* of May 15th, p. 783, the test by which Prof. Clay judges of the genuineness of this substance, which may be briefly summarized thus: If it has a bitter taste it is not pure; if it contains Canada balsam, on heating it the characteristic odor of that substance will be evolved; if it gives off an odor of turpentine when heated and is entirely soluble in alcohol it is not pure; the odor is between that of fennel and elemi, and the taste slightly resembles that of mastic; the powder on the surface shows no trace of crystalline structure when examined under the microscope. Dr. Battye suggests that Strassburg turpentine is the best substitute for Chian turpentine, on account of its containing more silica, to which he supposes the efficacy of Chian turpentine to be due, forgetting, apparently, that Dr. Clay expressly states that in his hands Venice and Strassburg turpentine "have not produced the same beneficial effects on cancerous growths as Chian turpentine has done," while he finds Canada balsam to be "positively injurious" in cancer. As there is in circulation in trade some "Chian turpentine," which is nothing more than dried Canada balsam, pharmacists will do well to make themselves well acquainted with the odor of that drug. This so-called Chian turpentine is of a pale yellow color, perfectly clear and transparent, with a powdery surface, but when chewed or heated is readily recognized by its odor and taste, which are totally different from the fennel-like odor and mastic-like taste of the genuine drug.—*Monthly Review of Medicine and Pharmacy.*

## CLAY'S TURPENTINE MIXTURE.

SIR: Having to dispense this mixture very frequently, I find the following method answers very satisfactorily:

The sulphur, having first been reduced to a very fine powder, is rubbed down smoothly in a mortar with half the mucilage of tragacanth, water is then added, and the mixture put into a bottle. A separate emulsion of the Chian turpentine is then prepared by adding the ethereal solution of the turpentine gradually to the remainder of the mucilage in another bottle, shaking well after each addition of the turpentine solution, then adding the syrup and water. The sulphur mixture is then gradually added to the emulsion, shaking thoroughly after each addition.

| | | |
|---|---|---|
| Take of | Sublimed sulphur | 20 grains. |
| | Mucilage of tragacanth | 1 ounce. |
| | Distilled water | 3 ounces. |

Mix.

And add this to the following emulsion:

| | |
|---|---|
| Ethereal solution of Chian turpentine | 2 drachms. |
| Mucilage of tragacanth | 1 ounce. |
| Syrup | ½ ounce. |
| Distilled water | to make 4 ounces. |

If any separation of resin takes place, the mucilage should be increased.

*Middlesex Hospital.* S. R. CHALLICE, *in Pharm. Jour.*

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MEDICINE IN EGYPT.—The following, from the *Egyptian Gazette*, seems to show that there is room for smart doctors in the land of the Pharaohs: "It may sound strange in the ears of European doctors, but it is nevertheless true, that chloroform is not used at all in the native hospitals, and scarcely ever by native doctors in their private practice. It is not so very many years ago since one of the most celebrated native surgeons withdrew from a case, in which death must have ensued had not a European surgeon insisted on using chloroform in the case. The native surgeon said he had never given it, nor would he in this case (although the patient was his) take any responsibility in the matter. It is evident that the European element is required, not only in financial and other departments, but also in the Medical School." There is a medical school in Cairo, but if it is managed by native talent the students are not likely to hear of any modern improvement in the same century which witnesses its discovery.

## CONVERSION OF HYOSCYAMINE INTO ATROPINE.

In continuation of previous papers, giving the results of his investigations on the alkaloids of solanaceous plants, Prof. A. Ladenburg, of Kiel, lately announced that he had succeeded in converting hyoscyamine into atropine.

When hyoscyamine is decomposed [with baryta or hydrochloric acid] it forms two new products which were heretofore denominated hyoscine and hyoscinic acid. Under similar conditions, atropine furnishes tropine and tropic acid. Ladenburg has now ascertained that both the acids, hyoscinic and tropic, and the secondary alkaloids, hyoscine and tropine, are identical. The author prepared a considerable quantity of the hyoscine, not, however, from hyoscyamine, but from the less costly daturine, the identity of which with hyoscyamine had previously been proven by him. Twenty gm. of commercial daturine yielded ten gm. of hyoscine. All physical and chemical properties of the latter agreed with tropine prepared from atropine. The identity of the products of decomposition of two substances which are not themselves identical was so remarkable a phenomenon that the author was induced to try whether he could not prepare the alkaloid atropine, not from tropine and tropic acid (as he had already done previously), but from the decomposition products of the other alkaloid. For this purpose the following three sets of experiments were made:

1. Tropine from atropine, and hyoscinic acid from daturine, were treated on the water bath with diluted hydrochloric acid.

2. Hyoscine from hyoscyamine, and tropic acid from atropine, were similarly treated.

3. Hyoscine from hyoscyamine, and hyoscinic acid from hyoscyamine, in the same manner.

The produced alkaloids were precipitated by potassium carbonate, the precipitate dissolved by chloroform, and the latter evaporated. The residue was dissolved in diluted hydrochloric acid and precipitated with chloride of gold. This produced an oily salt, which soon solidified, and which was recrystallized from water. In all three cases the product turned out to be atropine gold, recognized both by its characteristic color and by its melting point.

Hence hyoscyamine may be converted into atropine, and, on decomposition, both of these alkaloids yield identical products.—*Ber. d. Deutsch. Chem. Ges.*

## INSECTS DESTROYED BY FLOWERS.

Mr. J. W. Slater, in a communication to the Entomological Society of London, says: Whilst it is generally admitted that the gay coloration of flowers is mainly subservient to the purpose of attracting bees and other winged insects, whose visits play so important a part in the process of fertilization, it seems to me that one important fact has scarcely received due attention. Certainly gayly colored, or at least conspicuous, flowers are avoided by bees, or if visited have an injurious and even fatal effect upon the insects. Among them are the dahlia, the passion flower, the crown imperial, and especially the oleander. That the flowers of the dahlia have a narcotic action both upon humble bees and hive bees was first pointed out, I believe, by the Rev. L. Jenyns, in his "Observations in Natural History." He mentions that bees which visit these flowers are soon seized with a sort of torpor, and often die unless speedily recovered. He quotes also a writer in the *Gardeners' Chronicle*, who pronounces the cultivation of the dahlia incompatible with the success of the bee-keeper. I find it also recorded that the passion flower stupefies humble bees; that bees of all kinds avoid the crown imperial and the oleander, and that the honey of the latter is fatal to flies. I cannot call to mind that I ever sew a butterfly or a moth settled upon the flowers of this shrub in Hungary and Dalmatia, where it is very abundant. It seems not unimportant to ascertain whether the above mentioned phenomena have been verified by other observers; whether any other insects in such cases undertake the functions generally exercised by bees, and whether other flowers have a similarly noxious or deadly action upon insects.

CONSUMPTION OF QUININE.—The *Presse Med. Belge* says that, according to a statistical calculation of the amount of quinine consumed in the universe, it appears that 100,000 kilograms of the sulphate, valued at 56,000,000 fr., are consumed annually. If we add the value of the other salts—as the chlorhydrate, bromhydrate, etc.—which may be put at about 2,000,000 fr., we have a total of 58,000,000 fr. expended for this one drug annually.

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## HOW TO USE GLUE.

The following practical hints on the preparation and use of glue are from the London *Furniture Gazette:*

"All the glue as received from the factory requires the addition of water before it will melt properly, and every addition of water (while the glue is fresh made) will, up to a certain point, increase the adhesiveness and elasticity; and it is the duty of every man who uses glue to find out just where that point lies, as it is possible to melt glue and have it so thick that after it is dry or set it will be so brittle as not to adhere to the wood. Some glues will bear more water than others, but all will bear more water than usually falls to their share, and that, too, with a greater increase in the quality of the work.

"For glue to be properly effective, it requires to penetrate the pores of the wood, and the more a body of glue penetrates the wood the more substantial the joint will remain. Glues that take the longest to dry are to be preferred to those that dry quick, the slow-drying glues being always the strongest, other things being equal.

"For general use, no method gives so good results as the following: Break the glue up small, put into an iron kettle, cover the glue with water and allow it to soak twelve hours; after soaking, boil until done. Then pour it into an air-tight box; leave the cover off until cold, then cover up tight. As glue is required, cut out a portion and melt in the usual way. Expose no more of the made glue to the atmosphere for any length of time than is necessary, as the atmosphere is very destructive to made glue.

"Never heat made glue in a pot that is subjected to the direct heat of the fire or a lamp. All such methods of heating glue cannot be condemned in terms too severe.

"Do not use thick glue for joints or veneering. In all cases work it well into the wood in a similar manner to what painters do with paint. Glue both surfaces of your work, excepting in the case of veneering. Never glue upon hot wood, nor use hot cauls to veneer with, as the hot wood will absorb all the water in the glue too suddenly, and leave only a very little residue, with no adhesive power in it."

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## NOTES AND ABSTRACTS FROM VARIOUS SOURCES.

REMOVAL OF SILVER-NITRATE STAINS.—Instead of potassium cyanide, Dr. H. Kaetzer uses a solution of 10 grams ammonium chloride and 10 grams corrosive sublimate in 100 grams distilled water, which must be kept in glass-stoppered bottles. It will readily remove the stains from the skin, linen, wool and cotton, without injuring the fabric.—*Pharm. Zeitung.*

FRECKLES.—

| | |
|---|---|
| Take of Sulphophenate of zinc (sulphocarbolate) | 1 part. |
| Oil of lemon | 1 part. |
| Alcohol | 5 parts. |
| Collodion | 45 parts. |

Mix well together by trituration and apply to the face morning and night.

ANOTHER WARNING TO TOBACCO USERS.—The *Commonwealth*, of Richmond, Va., publishes the following illustration of the virulently poisonous nature of tobacco: "A man named Weakly died a few days since in Culpeper county, aged a hundred and five years. It is supposed his death was hastened by the use of tobacco, to which he was addicted for a period commencing shortly after the conclusion of the Revolutionary War."

MR. EDISON has really committed the unpardonable sin of inventing a patent medicine. He calls it "Polyform," and compounds it of chloroform, chloral, camphor and aconite, to be used as a liniment for neuralgic pains. A vial holding about an ounce or so is sold in the United States for 6*s*. Mr. Edison is believed to have made all his previous inventions merely for the sake of getting a preliminary fame so that he might launch his new discovery on the universe with sufficient *eclat.*—*Chemist and Druggist.*

DETECTIONS OF FREE MINERAL ACIDS IN VINEGAR.—Mr. F. Masset recommends to use sodium salicylate as a reagent for this purpose. This salt is decomposed with liberation of salicylic acid, by all the mineral acids in a free state, as well as by some of the stronger organic acids, such as tartaric or oxalic. But acetic acid does not decompose it at once, although it does so after a considerable time. About one or two fluid drachms of the vinegar (or acetic acid) to be examined is poured into a test tube, and twenty to thirty minims of a twenty per cent. solution of sodium salicylate are then added. If any mineral acid was present, salicylic acid will be liberated in flocculent masses, and in quantity corresponding to the mineral acid present. This is, of course, only a preliminary test; if it yields evidence of the presence of the suspected impurity, the nature of the latter must be determined by the usual analytical methods.—*Jour. de Pharm. d'Anvers.*

GLYCERIN CEMENT.—According to *Dingler's Journal*, Professor Morawski finds that the cause of the hardening of glycerin cement is the formation of lead glyceride, a salt of glycerin and lead oxide. This crystallizes in fine needles, and is formed according to the following equation: $C_3H_8O_3+PbO=C_3H_6PbO_3+H_2O$. The greatest hardness is obtained by adding 5 c. c. of glycerin to 50 grams of litharge. If more glycerin is used the mass solidifies more slowly, and never gets so hard. To obtain a quickly hardening cement, two volumes of water should be added to five volumes of glycerin, and 6 c. c. of the mixture incorporated with 50 grams of litharge.—*Boston Journal of Chemistry.*

HOW TO DISTINGUISH NATURAL AND ARTIFICIAL BUTTER.—Dr. G. C. Wittstein, in an Austrian pharmaceutical journal, explains how to distinguish cream butter from "ox butter" by means of the microscope. Place a small piece of the butter upon an object-glass, spread it out by means of a cover-glass, and observe it under a power of 300 to 400. If it is pure butter the whole field is filled with extremely fine globules, which are entirely destitute of any approach to crystalline form. If the butter is artificial, or a mixture of both, the field presents numerous angular or acicular particles between the globules. These crystalline particles are derived, no doubt, from the stearine which forms part of the beef tallow in artificial butter. Lard does not show any such crystalline particles.—*Boston Journal of Chemistry.*

BROMIDE OF ETHYL.—M. Terrillon, of Paris, has employed bromide of ethyl extensively as a means of producing local anæthesia for minor surgical operations. It has one advantage over sulphuric ether that, other things being equal, should insure its general adoption for this purpose. It is not inflammable, and the uncomfortable accidents that may attend the use of ether, on account of its inflammability and volatility, are not possible with the new agent. M. Terrillon claims that atomization of from a minute and a half to two minutes will produce a local anæthesia sufficient for the opening of the most painful abscesses, or the use of the thermo-cautery, which was open to special objections when only ether was available. If the atomization is continued for some minutes the deeper tissues are quickly affected, and larger operations, such as the removal of small tumors, etc., may be performed.—*Chicago Medical Review.*

NEW USE FOR COCKROACHES.—In Russia, cockroach, in powder or infusion, has been for a long time a popular remedy for dropsy. The attention of the profession was called to it for the first time by Dr. Kuprianoff, in his dissertation for the degree of Doctor of Medicine, his thesis being that the cockroach in one-grain doses is a reliable diuretic. Later on, Dr. Bogomoloff (*St. Petersburger Medicinische Wochenschrift*, 1875, No. 31) made experiments with antihydropine on six patients in Pro. Botkin's clinic, and three patients in Krasnoe Selo Hospital, all suffering from dropsy induced by various causes. The conclusions to which he arrived were as follows: antihydropine increases the amount of urine and diminishes the amount of albumen and structural elements, dropsical symptoms disappear, the weight of the body diminishes, perspiration in the majority of cases increases, and the digestion is not affected by it at all.—*N. Y. Record.*

ELECTRICITY IN THE HUMAN BODY.—The *Lancet*, May 22d, 1880, contains the following paragraph, on the varying "electrical condition" of negroes, extracted from the *Eastern Morning News:*

"Most people are familiar with the 'sparks' which may be produced under certain conditions by stroking the fur of a cat; and travelers in Canada and other cold, dry countries have witnessed the still more remarkable phenomenon of the human body being turned into a conductor of electricity, and the possibility of lighting the gas by merely placing one's finger—given the necessary conditions of electrical excitement—near the gas jet, without any other agency. Mr. A. W. Mitchinson, the African traveler, who is engaged in writing a narrative of his exploring expeditions in West Central Africa, gives some still more startling facts. He states that one evening, when striking an African native, in a moment of anger, with a cowhide whip, he was astonished to see sparks produced, and still more surprised to find the natives themselves were quite accustomed to the phenomenon. He subsequently found that a very light touch, repeated several times, under certain conditions of bodily excitement, and in certain states of the atmosphere, would produce a succession of sparks from the bodies of native men as well as native cattle. A lazy nigger, it seems, yielded none of these signs of electricity—a rather unfortunate circumstance for his more active brethren, who may possibly come in for a share of undeserved flogging from the hands of future travelers in search of electrical phenomena among the human race. We are not aware that these facts have been recorded by other travelers, but they certainly deserve thorough sifting by competent observers."

CHLORINATED COTTON.—Professor Cav. Carlo Pavesi recommends the use of chlorinated cotton as an effective and economical means of gradually diffusing chlorine gas through the atmosphere of surgical wards in hospitals, or as an external application in wounds which may require antiseptic treatment. In the latter case he preferably uses cotton which has previously been moistened with glycerin, since the latter seems to cause the chlorine gas to be retained for a much longer period.

The chlorinated cotton is prepared by placing into a large vessel with wide mouth a concentrated solution of commercial chloride of lime, which should not occupy more than one-eighth of the volume of the vessel, adding a small quantity of sulphuric acid, and then suspending in the upper part of the vessel fine carded cotton, either dry or previously moistened with glycerin, in such a manner that the liquid itself cannot come in contact with it. The vessel is then carefully closed and set aside for twenty-four hours.—*Bolletino Farmaceutico.*

AN ANGRY DOCTOR.—The editor of the Philadelphia *Medical and Surgical Reporter* thus scolds and threatens:

"It has been said that there are over seven hundred drug stores in this city; that not one of them would be able to pay its expenses if confined to its legitimate business of compounding prescriptions. It is alarming to contemplate the vast amount of trashy proprietary medicines that are sold in this community, in order to make a living for the large excess of druggists. Scarcely a single store is free from the opprobrium of counter prescribing. In the minds of many it is high time that, in the best interests of the community, as well as of the profession, some remedy should be adopted for these growing evils. Drug stores must be established where no patent medicines are sold and where the pharmacist shall respect his calling as well as that of the physician. If druggists will not do this, our leading physicians will, in self-defense, establish central offices of this kind, which shall be kept fully under the control of the profession. As an aid to medical practice, pharmacy has a legitimate claim to recognition and respect; but when the druggist becomes the antagonist and rival to the physician his fate it is not difficult to foretell. He may flourish for a time, like the bay tree, but his end will be destruction. Rather than weakly submit to such gross abuse of trust and unfair competition, the medical profession will reluctantly resume its former function, and every doctor be his own druggist."

HYDROBROMIC ACID AS A VERY DELICATE TEST FOR COPPER.—A solution of cupric bromide is blue; if the same is evaporated, the solution turns, at first, dark, reddish brown, leaving finally the anhydrous bromide as an almost black mass.

The dehydration can, also, be produced by the addition of a concentrated solution of hydrobromic acid; if, therefore, to a dilute solution of a copper salt concentrated hydrobromic acid is added, a dark, brownish red or violet color is at once produced.

This reaction is so delicate that 1-100 mgrm. of copper can be detected with certainty. One drop of a solution containing this small quantity of copper is brought on a watch glass, then one drop of hydrobromic acid is added, and the solution is then allowed to evaporate slowly by standing the glass on a warm place. When the whole has been concentrated to about one drop, this will distinctly show a rose-red color. The color thus produced is about three to four times as distinct as the one which is obtained by the addition of ferocyanide of potassium. Of other metals which are examined in this direction we find only iron to be apt to interfere with this reaction, and then only when it is present in considerable quantity.

We think that this reaction may also be utilized as a colorimetric test for the quantitative determination of small quantities of copper.—*Journal American Chemical Society.*

## REVIEW OF CHICAGO DRUG MARKET.

Trade continues good for the season, showing, in the aggregate, an increase over the business for the same period last year. Prices for some goods are very unsettled, there being almost daily variations up and down. There is a wide range in the quotations for opium, there being a large quantity of old stock in the market that has been held by speculators for the past three years, which is badly depreciated in quality and can be bought very much below the price for strictly prime grade. Our quotation is for prime, which is now held at $7.25 by the case in New York.

| | | |
|---|---|---|
| Acid, Nitric | lb. | 12 @ 14 |
| “ Tartaric | “ | 58 @ 60 |
| Aloes | “ | 16 @ 50 |
| Amm., Carbonate | “ | 22 @ 25 |
| “ Muriate | “ | 14 @ 16 |
| Bleaching Powder | “ | 4 @ 5 |
| Blue Vitriol | “ | 10 @ 12 |
| Borax | “ | 12 @ 13 |
| Camphor | “ | 28 @ 30 |
| Cantharides | “ | 1.25 @ 1.40 |
| Cassia | “ | 25 @ 30 |
| Castile Soap | “ | 8½ @ 17 |
| Chamomile Flowers | “ | 30 @ 38 |
| Cinchonidia, oz. bots | oz. | 1.05 |
| Cloves | lb. | 43 @ 45 |
| Cream Tartar (pure) | “ | 37 @ 40 |
| Cubebs | “ | 22 @ 25 |
| Cuttle Fish Bone | “ | 28 @ 30 |
| Ergot | “ | 65 @ 75 |
| Ginger, Afr | “ | 10 @ 15 |
| “ Jam | “ | 25 @ 30 |
| Glycerin | “ | 20 @ 85 |
| Insect Po | “ | 60 @ 70 |
| Iodine, Resub | “ | 5.50 |
| Ipecacuanha Po | “ | 1.50 |
| MERCURIALS— | | |
| Blue Pill | “ | 50 @ 53 |
| Calomel | “ | 68 @ 70 |
| Corrosive Sub | “ | 58 @ 60 |
| Mercurial Oint | “ | 48 @ 56 |
| Red Precipitate | “ | 78 @ 80 |
| Morphia Sul. P. & W. | ⅛ oz. | 4.75 @ 5.00 |
| Nutmegs | lb. | 1.10 |
| Oil, Anise | “ | 2.00 @ 2.25 |

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|---|---|---|
| Arnica Flowers | lb. | 19 @ 22 |
| Assafœtida | “ | 23 @ 25 |
| Balsam Copaiba | “ | 75 @ 80 |
| “ Tolu | “ | 75 @ 80 |
| Bees-wax | “ | 30 @ 33 |
| Oil Bergamot | “ | 3.00 @ 3.25 |
| “ Cassia | “ | 1.35 @ 1.50 |
| “ Castor | gll. | 78 @ 88 |
| “ Lemon | lb. | 3.25 @ 3.50 |
| “ Olive | gll. | 80 @ 3.50 |
| “ Pennyroyal | lb. | 1.25 @ 1.30 |
| “ Peppermint | “ | 3.25 @ 4.00 |
| “ Sperm (pure) | gll. | 1.35 @ 1.40 |
| “ Wintergreen | lb. | 3.25 @ 3.50 |
| “ Roses | oz. | 5.00 @ 8.00 |
| Opium, prime | lb. | 7.50 |
| Pepper, Cayenne | “ | 28 @ 30 |
| Potass., Bromide | “ | 38 @ 45 |
| “ Chlorate | “ | 22 @ 25 |
| “ Iodide | “ | 3.50 @ 4.00 |
| Quicksilver | “ | 55 @ 60 |
| Quinine, P. & W., 1 oz. btls. | | 3.10 |
| Salicin, 1 oz. vials | oz. | 43 @ 45 |
| Santonin, 1 oz. vials | “ | 70 @ 75 |
| Seed, Canary | lb. | 3¾ @ 5 |
| “ Hemp | “ | 3¾ @ 5 |
| Senna | “ | 18 @ 25 |
| Seneka Root | “ | 75 @ 80 |
| Shellac | “ | 40 @ 48 |
| Soda, Bicarb | “ | 4 @ 6 |
| “ Sal | “ | 1¾ @ 3 |
| Squills | “ | 14 @ 16 |
| Sugar, Lead, white | “ | 18 @ 20 |
| Tonqua Beans, Angostura | “ | 2.50 @ 2.75 |

THE PHARMACIST.

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# EDITORIAL.

## PHYSICIANS *VS.* PHARMACISTS IN PHILADELPHIA.

We place before our readers, in this issue, the report of a committee appointed by the *Medico-Legal Society* of Philadelphia on the pharmaceutical abuses current in that city, in which the general relations of the two professions are discussed in considerable detail. The report is full of ludicrous, not to say ridiculous, arguments and conclusions. It blames the pharmacist for selling homœopathic specifics; but since these are never bought except by patrons of homœopathy, it follows that their sale does not injure regular practitioners and helps to starve out the homœopaths. *Is not this right?*

The committee are very severe in their censure of pharmacists for selling proprietary preparations or nostrums, while as a matter of fact many of these nostrums are prescribed daily by nearly all regular physicians, to say nothing of the irregulars. Shall we further advertise these nostrums, whose names glitter on almost every page of our medical journals, by mentioning them? We will do so in case the committee, being probably young men, have not sufficient experience and knowledge to recognize them.

Great fault is found with pharmacists for directing patients, an opportunity that rarely presents itself, to physicians whom, on account of skill or friendship, they prefer; but no penitence is betrayed on account of similar practices by physicians. It is an hourly occurrence in this city for physicians, rated as "leading," to send their customers past from one to a dozen good pharmacists to some favorite and probably rich establishment. The neglected pharmacists complain of this; but, so long as the physician is not in percentage co-partnership with his favorite pharmacist, we, like the favorite pharmacist, do not see in the matter any essentially bad motive.

No report of this nature would be at all complete without the usual tirade against prescribing over the counter. But if some pharmacists prescribe rather too freely over the counter, do not a great many physicians dispense entirely too much from their pockets? If there were less of this pocket dispensing done we are sure there would be less counter prescribing. The physician says he does this, or directs the patient how to make or get remedies cheaply, to save him unnecessary expense; but this is precisely the reason which the pharmacist offers to excuse his counter prescribing.

Repeating prescriptions is, of course, denounced as dangerous to the public; yet we have never heard of but little, if any, harm traceable to this cause. True, terrible instances can be hypothecated, and possibly some have occurred in this manner; but the real cause of complaint is of a totally different character, viz., loss of fees to the physician. If repeating prescriptions causes so much disease and suffering to the people, would not the correction of this abuse cause the starvation of many members of the medical profession, including, of course, the members of all these reforming committees? Have these gentlemen really suicidal intentions, or is their plea in this respect dishonest?

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THE death of Dr. L. V. Newton, who for twenty years so ably edited the New York *Druggists Circular*, will be sad news to every intelligent pharmacist in this country. Elsewhere we republish a very full obituary notice of him.

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CHICAGO COLLEGE OF PHARMACY.—The course of lectures at this institution will begin October 4th and terminate about the 1st of March. Those wishing the announcement, as well as those employers wishing to engage the services of students during the lecture season, should apply to or address Mr. Thomas Whitfield, 240 Wabash avenue.

## ANOTHER NASTY NOSTRUM.

A writer in the *Toledo Medical and Surgical Journal* highly recommends, in the treatment of consumption, "Hydroleine," which, from an advertisement in the New York *Medical Record*, we learn is a mixture of cod-liver oil, water, "soluble pancreatin," "soda," "boric acid" and "hyocholic acid." Now, pancreatin is something about which there is much mystery and uncertainty, both as to the nature and composition of the commercial article, and as to the value and *modus operandi* of the pure product.

Hyocholic acid is a resinous acid substance found in pig's bile. It is insoluble in water, but its soluble salts are bitter, giving to the bile part of its bitter taste. "Hydroleine," then, consists of oil, whose use is supposed to be as a calorifacient and basis for the formation of white blood corpuscles; pancreatin, which would tend to decompose the oil into glycerin and oleic acid, and thus in part spoil it, but by its emulsifying properties would enable the mixture to contain a large percentage of the very profitable and highly valuable constituent, water; soda, to keep the bile acid in solution *in the bottle*, but which would be withdrawn by the acids of the stomach, thus setting the wax-like hyocholic acid free in the stomach; boric acid, to prevent fermentation, of which digestion is one variety; and, finally, hyocholic acid to—well, to mystify the mixture and make it appear to be expensive.

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FATAL BLUNDER.—At Red Bank, N. J., August 9, Dr. Conover prescribed two ounces magnesia sulphate for Elizabeth Monahan, a cook who had cut her fingers badly, in consequence of which gangrene had set in. The prescription was put up at the drug store of Dr. George Van Brunt, by the proprietor, who interpreted it to mean Magendie's solution. A few hours later the prescription clerk arrived, noticed the error and fainted. The doctor then, so the telegram runs, looked over the books, discovered his mistake and telegraphed Dr. Conover, but it was too late. The woman died. Dr. Van Brunt was promptly arrested for manslaughter. Probably the execrable chirography of Dr. C. was as much to be censured as the ignorance of Dr. V. B.

WITH commendable enterprise the *Philadelphia Record* has followed up the notorious diploma vendors, John Buchanan and Wm. Paine, of Philadelphia, until it has secured the incarceration of the former and some of his associates and exposed the whole business. From the data thus far established it appears certain that Buchanan alone has issued about *eleven thousand diplomas*, of which only a few, perhaps one or two hundred, issued in the first years of his institution, were granted in a regular manner to those who had been in attendance during one or more terms of lectures. Adopting the style of Carlyle, we might, in view of these and similar facts, well say, "the United States of America contain a population of about fifty millions, mostly fools."

*Later.*—On the night of the 17th Buchanan jumped into the river from a ferry boat, and it is believed was drowned. Hereafter orders for diplomas should be addressed to him in care of his Satanic Majesty.

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ELIXIR OF BROMIDE OF POTASSIUM.—A correspondent having requested a formula for this preparation, we give below that recommended in the National Dispensatory, which, by reason of its adoption by the American Pharmaceutical Association in 1875, is semi-official. It is made by dissolving 1,280 grains of bromide of potassium in sixteen fluid ounces of red elixir.

The red elixir is made by adding half a fluid ounce of tincture of cochineal to fifteen and a half ounces of simple elixir; and simple elixir is made by dissolving one fluid ounce of oil of orange in fifteen ounces of deodorized alcohol.

A simple elixir, made by macerating *fresh orange peel* in sherry wine, will be found far more agreeable, especially if sweetened by the addition of a little simple syrup, and will of course answer equally as well as a solvent and vehicle for the bromide.

We are also requested to furnish a formula for "Elixir of Bromide of Iron." We have never seen a formula for this preparation, and, owing to the unstable character of ferrous bromide, unless protected by solution in dense syrup, we do not think a reliable and stable preparation could be formed which would pass muster as an elixir. A syrup of bromide of iron, similar to syrup of iodide of iron, is easily made by the same process used in the latter case.

CHIAN TURPENTINE, guaranteed pure, is offered in New York at $2.50 per ounce.

DR. CULL, of Georgia, has ascertained that a strong acetous tincture of blood root is a specific for "winter itch," whatever that may be.

CHIAN TURPENTINE IN CANCER.—As we predicted, no one seems to observe any advantage from the use of Chian turpentine in cancer, except Dr. Clay, who first proposed it. Dr. Lawson Tait reports to the *Lancet* that in twenty cases in which he tried it he perceived no benefit whatever, while Prof. Andrews, of this city, is inclined to the belief that the sulphur which Prof. Clay incorporated with the turpentine is, after all, the curative agent. It would, indeed, be strange if an antidote to this terrible disease should be found in an article so well known and so common as sulphur, but on theoretical considerations it does not seem incredible.

PHARMACEUTICAL EXAMINATIONS IN IOWA.—Since the issue of our July number, in which we intimated that the phase of the Iowa pharmaceutical law allowing examinations to be made by notaries was a loophole through which rascals might pass, we have received the forms devised by the Board of Pharmacy of that State, and find that this difficulty is well-nigh obviated by the requirement that the notary shall retain the questions in a sealed envelope until the candidate appears, and then allow him not more than five hours in which to write the answers in the presence of the notary, who is required to immediately seal the answers up and mail them to the Secretary of the Board. Probably this is the best plan possible, and yet it is evidently liable to the objection which we pointed out. If both the notary and the candidate were required to make oath that the instructions of the Board had been complied with, the method would be more reliable.

PHOSPHATE OF BISMUTH is recommended by M. Tedenat, of France, as superior to subnitrate. It acts in smaller doses, being more soluble, and is applicable to the same conditions for which the subnitrate is employed. The dose is one to two grains for an adult.

# SELECTIONS.

## REPORT OF THE COMMITTEE OF THE PHILADELPHIA MEDICO-LEGAL SOCIETY (FORMERLY N. W. MEDICAL).

### MEDICO-PHARMACEUTICAL ABUSES.

FELLOW MEMBERS: In conformity with their duty, your committee now present the results of their maturer consideration of the medico-pharmaceutical relations between physician and druggist and people, and offer a few hints, which, if put into practical operation, your committee believe, would work as potent correctives of the injuries and disadvantages that we believe are resulting from the broadcast sale of patent and proprietary nostrums by druggists; from prescribing for and treating patients, and unwarrantably renewing and multiplying physicians' prescriptions by druggists; from the increasing and prejudicial introduction of homœopathic specifics, and other irregularities connected with the business systems of medical and pharmaceutical practice.

We desire to first draw attention to some mistakes into which physicians themselves have perhaps unconsciously drifted. In the earlier days of the practice of the healing art, when the professional status of medical men was animated by a higher atmosphere of professional tone and public appreciation, the medical practitioner did not, as in these days, delegate to another class of business men almost the exclusive management of the therapeutics of medical practice. By permitting himself to depend on the druggist more and more, to act in the capacity of his professional aid, the physician has at length realized that the druggist has well-nigh got not only the compounding, but the dispensing lines into his own hands, and is practically driving the medical team for himself.

It is a philosophy of human nature to trust the bridge that carries us safely. By their professional patronizing of druggists, through the latter-day system of prescription writing and sending of patrons to drug stores for all needed remedies, physicians have unconsciously cultivated in most persons, and in all persons to some extent, the habit of greatly relying on the judgment and reliability of druggists for the preparation of remedies for varying phases of ailment; and thus learning to risk the knowledge of the pharmacist, there is developed so much confidence in his discretion and skill, that to a vast degree he, and not the physician, becomes the one consulted for remedies and treatment. Through this means the importance of the physician wanes, the influence of the druggist augments; the prosperity of the professional man is crippled, the avocation of the apothecary prospers; and nevertheless, to the last, the impaired business of the doctor continues to "boost" both the prestige and bank account of the wide-awake pharmacist.

On locating in a new neighborhood, it is the acknowledgment of druggists that their prospects depend on the aid of physicians who will direct patients to take prescriptions to their stores to be compounded, and thus build up the confidence of the community in the probity and trustworthiness of said druggists. But while the alert druggist finds his functions as a compounder thus advanced by the doctors, is he as careful to protect the professional functions of the doctors whose prescriptions and recommendations have established him in the community? Will not some druggists, after being thus aided to substantial standing in the neighborhood, make constant use of their enlarged opportunities to encroach, little by little, more and more, on the legitimate share of the physician's business? And will not some druggists single out a particular doctor as a favorite, and specially "run him," *sub rosa*, as "the physician who gets nearly all the business?" Through this means, have not many competent and valuable physicians found themselves, like Samson, shorn of their professional strength and legitimate incomes, by the Delilahs of a druggist's preference, or a business intrigue? But whom shall we censure—the druggists who thus employ the opportunities afforded them to enhance their individual advantages, or the physicians who have short-sightedly delegated to druggists these valuable advantages?

Another mistake into which we believe regular physicians have drifted is their practice of charging round fees for professional visits merely, even when there is little occasion for such visits, and prescribing unnecessarily large quantities of expensive drugs. This mistake reacts in treble disadvantage to the regular profession at large: 1st. By building up the business of druggists by depleting the pecuniary means of patients. 2d. By promoting the use of proprietary and patent remedies. 3d. By facilitating the alternative of employing the cheaper sugar-pelleted homœopathist.

All cases of disease are not desperate, nor even severe. In many instances recovery is certain and speedy, and very little medicine required. If the physician is called, and he charges two dollars for his visit, prescribes sufficient compounds to cost a dollar more, and anxiously renews his two-dollar visit next morning, to see how the prescriptions have worked, to find the patient quite well, although but a dose or two of his bulk of medicines were swallowed, the logical sequence is that on future occasions of slight ailment the druggist will be applied to for a few cents' worth of syrup of rhubarb, or a twenty-five cent bottle of Quackbosh's Ready Cure will be first tried, or Dr. Infinitesmal with his ready-at-hand attenuations will be called in, at a total expense of one dollar. And whose is the fault?

As a rule, persons who are sick, or have friends ill, concern themselves more about the fact of their restoration than about the particular "ist" or "athy" of the means of restoration. If regular physicians would hold the balance of influence and patronage that deservedly belong to them, with due forecast of policy they must guard the avenues through which these vital advantages may so easily be dispelled.

Another mistake into which some physicians have drifted is that of having smirched the reputation of the profession with the odium of making dirty compact with unscrupulous druggists for a percentage "divvy" on prescriptions diverted to the stores of the latter and made up at excessive prices; bottles and boxes of unused medicines being needlessly set aside by the astute doctor at successive visits, to be substituted by others no less expensive. The shamelessness of such villainous robbery of confiding patrons is only equaled by the professional impolicy of thus laying broad trains of public disaffection through the narrow purlieus of individual good!

Your committee would next draw attention to some sources of complaints of physicians relative to various customs of druggists that injuriously affect the professional and business functions of the medical practitioner. All will agree that sentiments of kindliness and due regard for each other's professional and business province should animate the relations of physician and druggist with each other. Otherwise, under existing usages of treating the sick, the public confidence would be prejudiced and the success of treatment indefinitely impaired. But beyond doubt there are some customs indulged in by various druggists which directly tend to depreciate the confidence and esteem of prescribers. If a physician prescribes a valuable therapeutic like quinine in certain quantities, and the druggist substitutes a less effective alkaloid of bark, he practices a deception on both prescriber and patient that involves a mutual disappointment in results, and robs them both—one of his money, the other of reputation for skill. If, in compounding prescriptions which anticipate standard formulæ, the druggist puts in diluted medications of these instead, both patient and prescriber are again the innocent victims of his unscrupulousness. If, in compounding a prescription, a druggist substitutes a different article for the one prescribed, because the one specified is not in his stock, he practices an arrogant deception wholly at variance with his duties as compounder. If, without being so authorized by the prescriber, the druggist frequently or indefinitely renews prescriptions intended by the physician for temporary employment only, or repeats the use of the prescription by making it up for various persons other than the one for whom it was intended, he assumes an unwarranted responsibility wholly impertinent to the province of his vocation as a responder to the prescribed *dicta* of the physician, who adapted his prescription to the indications of an individual case.

Inasmuch as the abuses of such renewals seriously hazard the physical and moral welfare of patients by continued use of what was designed for but transient employment, the practice of unauthorized renewals merits the uncompromising condemnation of all physicians. There can be no doubt whatever that the opium or morphine or chloral habit, and also the alcohol habit, have in innumerable instances resulted from these unwarranted renewals of prescriptions by druggists on application of the patient merely. Furthermore, many persons have undoubtedly been permanently injured by overdrugging the system with remedies potent in themselves as correctives of diseased conditions, but contra-indicated except where used under the observation of a prudent prescriber.

It is self-evident that, inasmuch as the legitimate business of the druggist is primarily and continuously sustained by the patronage represented through the prescriptions of regular practitioners of medicine, druggists lapse into professional and business malfeasance to the honor of their pharmaceutical *alma maters*, and especially to the regular practitioners of medicine, if they, the druggists, keep for sale, prescribe, sell, or in any manner act as selling agents for the sale and distribution of quack nostrums, patent and puffed proprietary medicines, or homœopathic specifics of any sort. The injuries to regular practice and the general medical profession that druggists are thus unconsciously working is beyond computation.

As it is the intent of the office of druggist to co-operate with the physician in the dispensing of needed remedies for the treatment of disease, the druggist should perceive that he is guilty of bad faith and business injustice if he intercepts the professional functions of the medical practitioner by prescribing for persons over the counter, or behind the shelter of the prescription case, or recommends and pushes the sale of patent medicines, or in any equivalent manner assumes the office of physician, except as a temporary alternative in pressing emergencies.

It will be perceived at a glance that it is no argument for druggists to affirm that they sell patent nostrums because people call for them, or one sells them or prescribes for persons because if he don't another druggist will. The wrong of one does not excuse the wrong of another. Was the pushing or sale of patent nostrums the object of the pharmaceutist's studies and graduation? Who is it that has trained the people to go to drug stores for all the paraphernalia of patent medicine makers? Who is it that is ever putting the endlessness of these stuffs into stock and introducing them to the people for a percentage on sales?

All right-thinking minds will agree that any druggist who takes advantage of his opportunity to prejudice the local field of medical practice by collusion with any certain physician, whether that collusion involves the infamous percentage fraud or not, and makes it his aim to specially divert the medical patronage to the one with whom he is in collusion, both such druggist and the "doctor" he "runs" are wholly unworthy either professional or public confidence, and deserve severest professional and public contempt.

Besides the renewals of prescriptions and prescribing over counters, the pushing of patent medicine almanacs and circulars bearing the imprint of the druggist's business card under every door and into every house, the constant and alluring display in plate-glass windows, in glittering show cases, and upon marble counters, of an endlessness of quack nostrums that profess, upon highly-colored wrappers, to cure every ailment and infirmity, even after all hope has been given up by the doctors, and the increasing sales of these misleading nostrums to all classes of people, are not only proving great injury to the public, but are telling with no unmistakable effect upon the stamina of medical practice. And unless there is some modification in the injurious current of these abuses the day must soon come when nearly every physician will be compelled to open a drug store for himself, in self-defense!

In conclusion, what shall be the corrective? The answer has been growing more and more self-evident. Let physicians take back into their own keeping the medical advantages, the professional prestige they have so needlessly delegated to druggists. Seek to draw the considerate attention of druggists to the injurious tendencies of these irregularities. Seek by a comprehensive effort to induce all druggists in Philadelphia to shut down at once, one and all, against the flood-tide of patent nostrums, abandon all unauthorized renewals of physicians' prescriptions, and yield all medical prescribing, in cases of disease, to the proper domain of the medical graduate. Prepare and furnish to each physician a list of all druggists who in good faith adopt this reform in pharmaceutical practice, that physicians may know who are worthy of support, and may throw to the advantage of such druggists the entire weight of professional patronage.

If this form of remedy is unattainable, then let every physician manfully cut the Gordian knot of these abuses, by providing himself with all needed remedials and furnishing patients such medicines as they require. Take a vigorous and determined hold of the lines of their own professional knowledge and influence, and drive their medical teams for themselves.

Nothing short of this, your committee believe, will arrest the pharmaceutical wrongs under which both the regular profession and the public welfare unjustly suffer.—*Med. and Surg. Reporter.*

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THE catalogue of the Library of the Pharmaceutical Society of Great Britain, recently received, is a volume of *four hundred and fifty pages.*

## ARTIFICIAL CONGRESS WATER.

So many receipts for making artificial spring waters are constantly published in the pharmaceutical journals that it may, at first sight, appear superfluous to offer another; still, most of the formulas for making a representative of Congress Saratoga water hitherto given are mere imitations of that celebrated water, containing perhaps only two or three of the principal ingredients, and, in some instances, introducing in considerable proportion substances that do not exist in it naturally. I would, therefore, offer the following, which includes all the constituents of the true water in the proportions in which they are found, according to the analysis of a celebrated chemist, or, more properly speaking, the quantities of each ingredient are such that by double decomposition the proper proportions will be produced, namely:

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|---|---|---|
| Bicarbonate of sodium | 314 | grains. |
| Precipitated chalk | 85 | " |
| Calcined magnesia | 24 | " |
| Nitrate of strontia | 1 | grain. |
| Sulphate of manganese | 2 | grains. |
| Sulphate of iron | 1 | grain. |
| Sulphate of potassium | 1½ | grains. |
| Nitric acid | 1 | grain. |
| Carbonate of potassium | 18 | grains. |
| Chloride of sodium | 44 | " |
| Bromide of sodium | 2 | " |
| Iodide of sodium | 3 | " |
| Alum | 2½ | " |
| Carbonate of lithia | 8 | " |
| Solution of silicate soda | 3 | " |
| Muriatic acid, sufficient quantity. | | |
| Carbonic acid water, sufficient quantity. | | |

As magnesia or the carbonate as well as carbonate of lime are nearly insoluble in carbonic acid water in the state they are found in commerce, it is necessary that they should be freshly precipitated, when they will be readily dissolved by it. This is accomplished by dissolving them in sufficient muriatic acid, thereby forming the chlorides of magnesium and calcium. The 314 grains of bicarbonate of soda, having been dissolved in 12 fluid ounces of water, are added to the solution of the chlorides, when freshly precipitated carbonates are formed. To this mixture is added sufficient carbonic acid water to make a clear solution, which would therefore contain both bicarbonate of magnesia and of lime, and chloride of sodium formed by double decomposition. It will be observed that there are 44 more grains of chloride of sodium called for by the receipt. This completes the quantity of that salt contained in one gallon of the water. The rest of the ingredients, having been dissolved in carbonic acid water, are added, and the whole, made up to one gallon with the same menstruum, will produce an artificial congress water that both in taste and effect bears the closest possible resemblance to the natural water.

Many persons have complained of the want of efficacy of artificially made waters, and of their not having the same properties as those which are natural. This, I believe, is due to the fact that the formulas by which such waters are made often differ from the analysis by omitting such ingredients as exist in small proportions. I have never found this objection made against the water as prepared by this formula, which I attribute to the retention of all the ingredients.—R. F. Fairthorne, Ph. G., *in American Journal of Pharmacy.*

## GLYCERIN IN GASTRIC TROUBLES.

Dr. Sydney Ringer calls the attention of the profession, in the *Lancet*, to the value of glycerin as a remedy in flatulence, acidity of the stomach and pyrosis. He states that sometimes he finds all of these gastric troubles combined, but glycerin in nearly all cases relieves them. In some cases, too, it removes pain and vomiting, probably like charcoal, by preventing the formation of acrid acids, which irritate delicate and irritable stomachs. Glycerin does not prevent the digestive action of pepsin and hydrochloric acid; and hence, while it prevents the formation of wind and acidity, probably by checking fermentation, it in no way hinders digestion. He administers a drachm to two drachms either before, with or immediately after food. It may be given in water, coffee, tea or lemon and soda water. In tea and coffee it may replace sugar, a substance which greatly favors flatulence, as, indeed, does tea in many cases. In some cases a cure does not occur till the lapse of ten days or a fortnight.—*Scientific American.*

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## HOW MR. HANNAY MADE HIS DIAMONDS.

Mr. G. B. Hannay, in a recent number of the "Proceedings before the Royal Society," gives an interesting account of the method employed by him in starting and prosecuting his experiments in making diamonds. And if only as a record of indomitable perseverance against ever-increasing difficulties, of scientific acumen, and of the true application of the Baconian method of research, as the London *News* justly says, it is worthy of study. Some idea of the nature of the investigation may be obtained from the fact that out of complex and expensive experiments only three succeeded. Violent explosions were frequent; furnaces were blown to pieces; steel tubes burst, scattering their fragments around. On other occasions, tubes which had been carefully prepared, filled, welded, and nestled in a reverberatory furnace for many hours, were found to have leaked and spoiled the experiment. "The continued strain on the nerves," writes Mr. Hannay, "watching the temperature of the furnace, and in a state of tension in case of an explosion, induce a nervous state which is extremely weakening, and when the explosion occurs it sometimes shakes one so severely that sickness supervenes."

The diamond-making experiments were started in September, 1879, when Mr. Hannay made many attempts to find a solvent for the alkali metals, sodium, potassium and lithium. But in no instance could such a solvent be found which did not, in the gaseous state and under pressure, unite with the alkali. Even in the case of hydrocarbons, such as paraffine spirit, containing only hydrogen and carbon, the alkali combined with the hydrogen, setting free the carbon. Now, as we know, diamond is pure carbon; hence, when this element was set free from a pure substance, it was thought that conditions of pressure and temperature might eliminate it in the hard, crystalline, adamantine form, namely, as diamond. Glass tubes were first employed, but although of great thickness in comparison with their bore, they were found to be insufficiently strong, and they were replaced by wrought iron tubes twenty inches long by one inch diameter, and having the diameter of the bore half an inch. In these lithium was heated for many hours to a high temperature in paraffine spirits, and on subsequently opening the tube carbon in a hard form was found within it. Great difficulty was experienced in getting the tubes perfectly air-tight, and eventually the open end was welded at a white heat, and by that means alone did it resist leakage. Sometimes tubes would burst with an explosion like a gun. A tube twenty inches long by two and three-quarters diameter and one-half inch bore was filled with a hydrocarbon made from bone oil, to which some charcoal powder was added, in order to keep an excess of carbon in the tube. Its open end was welded, and it was heated for fourteen hours with lithium. On opening it a quantity of gas appeared, and some minute pieces of hard carbon, which had evidently separated out from solution. Another similar tube burst at the end of eight hours' heating. A tube of cast iron, no less than three and three-quarter inches diameter, and with a bore of only three-quarters of an inch, exploded at the end of an hour with a fearful report, wrecking the furnace. Several tubes of steel also burst under the enormous pressure, at last shattering the top of the furnace. The author remarks that in nature the temperature must at one time have been much higher than anything we can now produce artificially; while the pressure obtained at a depth of two hundred miles below the earth's surface is greater than that which any of the materials from which we can form vessels can resist.

We come now to the great experiment which resulted in the artificial production of veritable diamonds. A tube twenty inches long by four inches diameter, of coiled Lowmoor iron, was bored so as to have an internal diameter of half an inch. Thus the central bore was surrounded by walls of iron one and three-quarter inches thick, and, of course, capable of resisting an enormous pressure. In the tube was placed a mixture of ninety per cent. of bone oil and ten per cent. of paraffine spirit, together with four grams (about sixty-two grains) of the metal lithium. The open end of the tube was welded air-tight, and the whole was then heated to redness for fourteen hours, and allowed to cool slowly. On opening it a great volume of gas rushed from the tube, and within was found a hard, smooth mass adhering to the sides of the tube. "It was quite black, and was removed with a chisel, and as it appeared to be composed principally of iron and lithium, it was laid aside for analysis. I was pulverizing it in a mortar, when I felt that some parts of the material were extremely hard—not resisting a blow, but hard otherwise. On looking closer I saw that these were most transparent pieces imbedded in the hard matrix, and on triturating them I obtained some free from the black matter. They turned out to be crystalline carbon, exactly like diamond."

Such is Mr. Hannay's account of his discovery. Subsequent chemical and optical analysis has proved that these hard shining crystals are, in every respect, true diamonds. The cost is obviously great; so, also, is the danger to life and property; and the great difficulties to be overcome render disappointments common. What we now want is to get vessels of a material sufficiently strong and non-porous to resist the high pressures and temperatures upon which the success of the experiment depends. What we have learned, among other things, from the brilliant researches of MM. Cailletet and Pictet, which led to the liquefaction of the so-called permanent gases, and from Mr. Hannay's experiments, described above, is, that we must push the forces of nature to their utmost strain by using our most powerful mechanical devices for producing pressure, our strongest materials for resisting it, and our intensest means of producing both heat and cold.—*Scientific American.*

## ANALYSIS OF VARIOUS NOSTRUMS.

**Allcock's Starkendes Poroses Pflaster—Allcock's Porous Strengthening Plaster.**—A brown plaster spread on shirting, and pierced with holes like a sieve. The plaster mass seems to be made by heating and melting together caoutchouc, Burgundy pitch, olibanum and myrrh, with the aid of turpentine oil.

**Phosphorized Cod-liver Oil** (Savory & Moore).—Cod-liver oil containing .06 per cent. of phosphorus.

**Phospholeine** (Baud & Garot).—The spinal column of cattle, washed with diluted spirit, rubbed up with sugar, dried on the water bath and powdered.—*Reveil.*

**Analeptic Pills** (Robert James, England), for rheumatism, indigestion, loss of appetite, giddiness, etc. Rufus pill, ammoniacum and James' fever powder made into pills, with hocus pocus of various kinds!—*Wittstein.*

BLANCHARD'S PILLS (Paris), recommended for various female diseases, chlorosis, etc.—A solution of iron iodide, prepared from .41 g. iodine, is made into syrup with 5 g. clarified honey, marshmallow-root powder and liquorice-root powder, of each .35 g., are added, and further evaporated till a pill mass is formed. The pills are rolled in iron powder and coated with ethereal solution of tolu balsam.—*Landerer.*

HOLLOWAY'S PILLS.—Useful in all diseases. A thousand pills contain aloes, 40 g.; rhubarb, 20 g.; cinnamon, 5 g.; cardamom, 5 g.; ginger, 20 g.; saffron, 2.5 g.; Glauber salts, 5 g.; potassium sulphate, 10 g.; and a sufficient quantity of confection of roses.—*Hager.*

According to Dorvault, 144 pills contain aloes, 4 g.; rhubarb, 1.7 g.; pepper, .45 g.; saffron and Glauber salts, of each .2 g.

MAGNETISCHE PILLEN—MAGNETIC PILLS.—Silver-coated pills, weighing .12 g., and containing resin, camphor, iron powder and chamomile. To be placed in the cavity of the ear.—*Hager.*

MORISON'S PILLS.—Two kinds are in the market. The No. 1 are milder. Aloes, 10 g.; cream of tartar, 5 g.; senna, 5 g.; made into .13 g. pills and rolled in cream of tartar.—*Bosredon.* Hager found that the pills as imported into Germany were prepared from aloes, 10 g.; gamboge, 4 g.; scammony, 2 g.; jalap resin, jalap root and marshmallow root, of each 10 g., made into 350 pills and rolled in cream of tartar.

No. 2 consist of aloes, 20 g.; colocynth, 15 g.; gamboge, 15 g.; jalap, 10 g.; cream of tartar, 10 g.; made into .13 g. pills and rolled in cream of tartar.—*Bosredon.* The pills imported into Germany were found by Hager to consist of aloes, 20 g.; gamboge, 2 g.; cream of tartar, 12 g.; marshmallow root, 10 g., divided into 350 pills, rolled in a mixture of cream of tartar, 3 p. and turmeric, 1 p.

Previously Hager gave the following formulæ—No. 1. Aloes, jalap resin, jalap root and marshmallow root, of each, 50 p.; gamboge, 20 p.; scammony, 10 p.; each pill containing .03 g. aloes, rolled in cream of tartar.

No. 2. Gamboge, 10 p.; aloes, 100 p.; cream of tartar, 60 p.; marshmallow root, 50 p.; each pill containing .1 g. aloes, rolled in a mixture of cream of tartar and tumeric. 9*s.* to 12*s.* a box.—*Hager.*

## CARBON DISULPHIDE.

This bad smelling, volatile and combustible liquid was discovered by Lampadius in 1796. In the arts it is one of the most useful compounds of sulphur, yet outside of the laboratory it is comparatively unknown. Nor can we expect, or wish, that it should ever become a familiar household remedy, for it is in every way exceedingly dangerous, more so than benzine and the so-called safety oils, beside which gunpowder and the fulminates are innocent and harmless.

The name is well chosen and exactly expresses its chemical composition, namely, one atom of carbon and two of sulphur, $CS_2$. It is one of the best examples of the effect of chemical union in modifying the physical properties of bodies. We are told that a chemical compound may differ in properties from its constituents; here are two solids, charcoal and brimstone, united to form a volatile liquid of penetrating odor. Its preparation is a true synthesis, a direct union of its constituents by the aid of heat.

Chemists have for a long time classed sulphur with oxygen, for, although one is a solid and the other a gas, in chemical properties they are very similar. At a high temperature sulphur is a gas, which supports combustion like oxygen, and is exactly twice as heavy as oxygen. When charcoal is burned in oxygen we have carbon dioxide, or $CO_2$, formed; and in like manner charcoal burned in sulphur vapor produces carbon disulphide, or $CS_2$.

The apparatus employed in its manufacture on a large scale consists of an ordinary clay retort, such as is used for making coal gas, placed vertically in a furnace with the open end upward. Two holes are made in the cover, and through one passes a porcelain tube, reaching nearly to the bottom of the retort. A tube is fitted to the opening near the end and connected with a suitable condensing apparatus. The retort is charged with pieces of charcoal and strongly heated; pieces of sulphur are then dropped down through the porcelain tube. The sulphur is at once volatilized by the heat and unites with the red-hot charcoal to form carbon disulphide, which distills over. It is, of course, impure, containing sulphur and various compounds of sulphur, which impart to it a very disagreeable odor. It is purified by rectification in zinc vessels by the aid of hot water or steam, and agitation with mercury.

When pure, it is a colorless liquid of an ethereal odor, and heavier than water, in which it is but very slightly soluble (sp. gr. 1.2684). It boils at 46.5° C. (115.7° Fahr.), but is volatile at ordinary temperatures. Wartha converted it into a snow-like solid, by passing a rapid current of air over it, though it refused to freeze at —95° C. Its temperature of ignition is quite low, 170° C., and its vapor, when mixed with air or oxygen is highly explosive. Great care must therefore be employed in its use to prevent accidents from fire. It is also excessively poisonous, both to men and the lower animals.

Carbon disulphide found but little use in the arts until 1843, when Jesse Fisher, in Birmingham, succeeded in making it at a price that permitted of its more extended application. Until 1850 it was chiefly employed in dissolving and vulcanizing india rubber, but at the present time its uses are very numerous. Of these, we may mention the extraction of oil from seeds, of fat from bones, of grease from wool, and of perfumes and flavoring essences; and as a solvent of phosphorus, iodine and other substances. Liquid fire, or Greek fire, is a solution of phosphorus in this disulphide. Electro-platers add $CS_2$ to their silver cyanide baths to improve the luster of the deposit. Metallic sulphides are sometimes made with this substance. In the synthesis of organic bodies it is almost indispensable. When ammonia gas is passed into it, a sulphocyanide is formed, which is used in making eggs of Pharaoh's serpents. If it is mixed with a fixed alkali like potash, we get a sulphocarbonate, $K_2CS_3$; a similar reaction to that with carbon dioxide. With alcoholic potash the product is an ethyl-oxy-sulphocarbonate, which is called a xanthate, because it forms a yellow precipitate with copper salts.

When a mixture of carbon disulphide vapor and sulphuretted hydrogen is passed over bright copper at a red heat, the sulphur combines with this metal, and the carbon and the hydrogen unite to form a hydrocarbon ($CH_4$) called marsh gas, or methyl hydride. From this many organic bodies can be formed synthetically.

A mixture of carbon disulphide and nitric oxide burns with great brilliancy, the light produced being very powerful in the shorter actinic rays, so that a lamp of this sort could be used in photography, or for exciting fluorescent and phosphorescent bodies.

When carbon disulphide is shaken with a semi-fluid sodium amalgam, until no more of it is taken up, a pasty mass is formed consisting of little globules. If this mass be heated on a water bath the excess of carbon disulphide is expelled, and on adding water, a hyacinth-red solution is produced, while mercury and its sulphide are precipitated. The solution contains the sodium salt of a combustible acid, which possesses the power of dyeing animal fibers yellow, reddish yellow and orange. This acid, recently discovered by Reichl, promises to be of use as a dye.

Carbon disulphide combines readily with aniline to form a crystallizable solid, known as *sulphocarbonilide*, $CS(NH,C_6H_5)_2$, which fuses at 140° C., and dissolves in alcohol, but not in water. With the para-amido-phenetol it unites to form a similar solid substance not yet analyzed, which we might call sulpho-carb-phenetolidide; or if a shorter but less expressive name is preferred, scaphtolid. The probable formula is too dreadfully long to remain fixed in one's memory, $CS\ [C_6H_5O\ (C_2H_5)\ NH]_2$.

With triethyl-phosphine it combines to form a compound which crystallizes in splendid ruby colored prisms, affording a delicate test for this substance, especially in coal gas.

The existence of a protosulphide of carbon, corresponding to carbonic oxide, has been several times asserted and as often denied. There can be little doubt of its existence, and probably there are several more of these sulphides.

Carbon sulphoxide, $COS$, is an intermediate link between carbon disulphide and dioxide. Although it can be prepared from carbonic oxide and sulphur, it is more easily made from potassium sulphocyanide by acting on it with sulphuric acid.—*Boston Journal of Chemistry.*

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Sulphurous Acid.—The *British Medical Journal* reports the publication, by Professor Gamgee, of a new and convenient mode of using sulphurous acid, the disinfecting qualities of which are universally known. Cold alcohol, the professor asserts, will dissolve 300 times its own volume of the gas; and a fluid possessing such powers of concentration cannot but be as efficient as it is portable and convenient. A few drops of the sulphuretted alcohol in the bottom of a trunk will disinfect any clothing that may be put into it; and fungus germs, such as must in casks, etc., may be destroyed by the use of a very small quantity.—*Boston Journal of Chemistry.*

## DIGESTIVE ACTION OF PAW-PAW JUICE AND PAPAIN.

Bouchut has shown (*Comptes Rendus*, August 23, 1879,) that the juice of the paw-paw and papain contains an agent capable of forming with albuminoid substances a combination having all the characteristics of assimilable peptones.

In making further experiments with dilute paw-paw juice or with papain upon *living tissues*, healthy or pathological, as adenomas and cancers, he attained results of great interest.

These tissues are digested by the agent and converted into peptones in the same manner as dead albuminoid matters.

Thus if a dilute solution of paw-paw juice or of papain be injected into the brain of an animal, by means of the hypodermic syringe, a digestion of the cerebral substance, with which the agent has come in contact, is found to take place.

All this portion, if examined twenty-four hours after death, presents a yellowish softened appearance, and in a circumscribed point has formed a *nidus* for yellow, and in some cases reddish, pulpy softening.

The animal, in three or four hours after the injection, falls in collapse, becomes paralyzed on one or both sides of the body, and dies in apparently great agony.

If, however, an injection of papain or of paw-paw juice be made into the muscles of the thigh, buttocks or loins of an animal a marked change in the muscular tissue is noticed twenty-four hours afterward. In that portion of the muscular tissue where the papain has lodged a softened, pulpy and gelatinous substance is found surrounded by normal muscular tissue; this soft substance has been formed from digested muscle.

In seven experiments the same results were reached in every instance.

Bouchut then turned his attention to pathological tissues, injecting the solution into adenomas and cancers.

In three cases of adenoma of the neck where the injection was used violent pain followed in about two hours, and a severe attack of fever was brought on.

Three days afterward the tumors became softened and were converted into abscesses, which, after being opened with a sharp instrument, healed in two out of the three cases.

In three cases of cancer of the breast and in one case of cancer of the groin, injections of papain led to softening and digestion of the large, hard tumors.

The liquid formed was drawn off, from one of the tumors, with the aspirator, and on analysis by Henninger proved to be a veritable peptone, showing then that the action of papain on cancerous tissue is true digestion.

When injected into cancers, the solution, although neutral, produced great pain and a formidable attack of fever.

A frog, partly skinned, when placed entire into a dilute solution of the paw-paw juice died in twelve hours, was partly digested in twenty-four hours, and at the end of ten days nothing was left but its skeleton.

These experiments tend to show that organized tissues, living or dead, may be peptonized by this substance, which is, as it were, *vegetable pepsin.—Am. Observer.*

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## OBITUARY.

### LUCAS VANDERVEER NEWTON, M.D.

Dr. L. V. Newton, for the last twenty-two years editor and proprietor of the *Druggists Circular*, died in this city on July 10, 1880, of hypertrophy of the heart, after a long and painful illness. He was born in Griggstown, Somerset county, New Jersey, February 19, 1809. While still quite young, he was placed in the printing office of Asher Minor, of Doylestown, Pa., to learn the printing business, laboring faithfully for his employer until his removal to Westchester, Pa. At the age of twenty, being already an untiring reader, and showing no small ability as a writer, he went to Princeton, N. J., where for a short time he edited the *American System*, a Clay tariff paper. From Princeton he went to Syracuse, N.Y., where he obtained employment as a compositor in the office of the *Onondaga Republican*, afterward becoming one of the editors of that paper. Leaving Syracuse, he went to Pittsburg, Pa., where, soon after his arrival, he wrote a prize essay, entitled "A Glance at the Progress of Knowledge," for a projected paper to be called *The Pearl*, but the enterprise having fallen through, the essay was published in the *Saturday Visitor*, a paper which he edited for some time. While thus employed he began to study medicine with Dr. A. McDowell, of Pittsburg, afterward attending the lectures of the Jefferson Medical College of Philadelphia, from which institution he graduated in 1837.

After graduating, he held for a while an official position as physician to a hospital in Philadelphia, but failing health compelling him to take some rest, he resigned, and took a trip to Europe, where he remained about a year, traveling in England and on the Continent. Afterward, in 1840, he went a second time to Europe, and practiced medicine in London for several years. In 1846, returning to this country, he landed in Portsmouth, Va., during an epidemic of fever, and was extremely successful in his treatment of the complaint. This gave him occasion to introduce Warburg's tincture, a preparation now well known, but at that time scarcely used outside of the British colonies. In the summer of 1848, an epidemic of yellow fever having broken out in New Orleans, Dr. Newton went there as a volunteer physician, and remained on duty during the whole time which the plague lasted. The fever spared him, but carried off a brother of his, then surgeon of the U. S. army, stationed at New Orleans.

Soon after, returning to New York, Dr. Newton divided his time between the practice of medicine, literary pursuits and scientific researches.

In 1850 he invented and patented a process for copper-facing types, and founded the business now known as the Newton Copper Type Company. In 1858, his health failing again, he decided to leave fatiguing occupations for the quieter pursuit of an editor, and on June 26 became proprietor of *The Druggists Circular*, then having but a limited circulation. Here, at last, Dr. Newton found an occupation entirely congenial to his tastes, and suited to his peculiar attainments and experience. For twenty-two years he kept his office in the same house, on the same floor, and almost in the same rooms, merely taking more space as the increase of business demanded.

In disposition, Dr. Newton was extremely kind and genial, always ready to listen to all and oblige the deserving. In his inclinations he was sociable and friendly, very entertaining in conversation, and having a keen appreciation of the ludicrous, was fond of telling or hearing a good story, at the same time never forgetting the respect due his hearers or himself. As an editor, he was remarkable for ease and rapidity in writing, elegance of language, clearness of expression and felicity of illustration. A clear-sighted business man, he was liberal in his dealings, sometimes generous to a fault, and scorned to take an unjust advantage in a transaction. His ability, perseverance and industry made *The Druggists Circular* what it now is, an enduring monument to his memory. During the past year, owing to illness, he took no active share in the business of the office.—*Druggists Circular.*

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## DIFFERENT SOLVENTS FOR PYROXYLENE.

In the preparation of collodion, the gun cotton, or pyroxylene, is dissolved in a mixture of alcohol and ether; in the manufacture of celluloid the solvent is camphor. Bardy, the celebrated French chemist, has recently studied the action of other solvents, especially aceton, methylic alcohol and glacial acetic acid. His results, as reported to the Photographic Society of France, were as follows:

Aceton, a liquid which resembles ether in its volatility, but unlike the latter, is miscible in all proportions with water, is one of the best known solvents of pyroxylene. It does not dissolve the firm cotton prepared at low temperatures as well as that in dust form made by Martin's process. On pouring the aceton solution into water, the solvent at once unites with the water, and the cotton is precipitated in the form of large white flakes, which do not adhere together, and hence can be easily washed. When dry, this cotton has a peculiar appearance; three grains of it occupy a space of nearly 200 c.c. It is not actually necessary to employ the pure aceton; if it gives no milky precipitate when poured into water and does not reduce salts of silver it is good enough.

Methylic alcohol, since its introduction into the manufacture of methyl violet, comes into commerce in a state of sufficient purity. It mixes with water in every proportion, and has no action upon silver salts. It dissolves pyroxylene easily, but the solution is more shiny than that in aceton. If poured at once into water it is precipitated as a compact gelatinous mass, difficult to wash out. The solution must be poured into cold water in a very fine stream, then a very voluminous mass is obtained; 25 grains occupy two liters of space and can be readily washed out. On drying, the mass becomes horny, half transparent and of an amber color. It dissolves readily in the mixture of alcohol and ether.

Crystallizable or glacial acetic acid dissolves pyroxylene, and when poured into water the solution acts like the aceton solution. On drying, every trace of the acetic acid is volatilized, leaving the cotton perfectly neutral.—*Scientific American.*

## USEFUL FORMULAS.

To R. W. Gardner, of this city, we are indebted for the following practical receipts:

### CRYSTAL POMADE.

| | | |
|---|---|---|
| ℞ | White Castile soap | 1 ounce. |
| | Alcohol (95 per cent.) | 12 ounces. |
| | Dissolve carefully in a water bath, | |
| | and add castor oil | 4 ounces. |

Perfume, and fill into warmed vials; let stand until cold, and cork.

### ANTISEPTIC TOOTH WASH.

| | | |
|---|---|---|
| ℞ | Liquor of potassa | 6 fl. drachms. |
| | Liquor of chlorinated soda | 4 fl. " |
| | Spirit of camphor | 4 fl. " |
| | Tincture of myrrh | 14 fl. ounces. |

Use with a little water.

### BENZOATED TINCTURE.

| | | |
|---|---|---|
| ℞ | Tonqua beans | 1 ounce. |
| | Vanilla " | 2 drachms. |
| | Nutmeg | No. 1. |
| | Mace | 2 drachms. |
| | Benzoic acid | 10 grains. |
| | Cologne spirit | 1 pint. |

Exhaust by percolation.

### "IMPERIAL" COLOGNE WATER.

| | | |
|---|---|---|
| ℞ | Oil of bergamot | 2 fl. ounces. |
| | " neroli | 2 fl. drachms. |
| | " lavender | 2 fl. " |
| | " Ceylon cinnamon | 1 minim. |
| | Extract of jasmin | 4 fl. drachms. |
| | Tincture of musk (grain) | 1 fl. ounce. |
| | Otto of rose | 8 minims. |
| | Extract of millefleurs | 4 fl. drachms. |
| | Benzoated tincture | 3 fl. ounces. |
| | Cologne spirit | 1 gallon. |
| | Water | 2 pints. |

Mix, adding the water last, and let the whole stand a week before filtering.

### VICHY WATER, ARTIFICIAL.

| | | |
|---|---|---|
| ℞ | Sulphate of potassa | 2 drachms. |
| | " of soda | 4 scruples. |
| | Phosphate of soda | 25 grains. |
| | Chloride of sodium | 6 drachms. |
| | Bicarbonate of soda | 5½ ounces. |
| | Carbonate of ammonia | 10 grains. |
| | Water | 4 pints. |

Charge slightly and let stand twelve hours. Remove from the fountain, filter, make up to ten gallons, and charge with carbonic acid gas as usual.

The above is recommended as a very close imitation of the genuine.

### SACCHARATED TARTRATE OF SODA.

| | | |
|---|---|---|
| ℞ | Bicarbonate of soda | 2 ounces. |
| | Tartaric acid | 2 " |
| | Sugar | 8 " |
| | Oil of lemon, sufficient. | |

Have the powders perfectly dry, mix them thoroughly, bottle and cork immediately.

A dessert spoonful to a tablespoonful in a glass of ice water makes a pleasant drink and is also mildly aperient.—*Druggists Circular and Chemical Gazette.*

## NOTES AND ABSTRACTS FROM VARIOUS SOURCES.

GARFIELD writes to a friend that he is left-handed; "the left-handedest man you ever saw," he says. Hancock is a twin, and Weaver appears to have a spinal trouble. In any event we shall have a physiological theory to enunciate in November.—*Louisville Medical News.*

THE Holman liver-pad is composed of drilling and filled so as to be about half an inch in thickness. It contains ground fenugreek seed and ground flaxseed, fifty per cent.; pitch, resin of galbanum, and resin of sandarac, forty-five per cent. The remainder is supposed to be composed of aromatics.—*Am. Practitioner.*

TO DEODORIZE BENZINE.—If to each gallon of benzine 3 ozs. of powdered quick-lime are added, and well shaken, a great deal of the peculiar sulphuretted odor will be removed, and articles that have been washed in it will have no disagreeable smell. This is no small advantage. The addition of freshly burnt charcoal may also be made with advantage.

PURIFICATION OF SULPHURIC ACID FROM ARSENIC.—According to F. Selmi, sulphuric acid can be readily freed from arsenic if the sulphuric acid, diluted with half its bulk of water, be distilled after addition of some plumbic chloride. All the arsenic goes over with the first portions of the distillate as arsenic chloride.—*Ber. Chem. G.*, *Am. J. Pharm.*

HYGIENIC "PUNCH."—Old lady (to eminent physician): "Tell me, what do you consider the most important rule of all for health?" Doctor (whose ideas run much on the hygienic properties of soils and air, etc.): "My dear madam, always live on gravel." Old lady (whose thoughts take a more gastronomic turn): "Oh, doctor, I'm sure I couldn't digest it!"

CASE OF OPIUM-POISONING WITH "DR. BULL'S COUGH SYRUP."—Dr. C. A. Bryce, in the *Southern Clinic*, concludes his report of this case as follows: "1. 'Bull's Cough Syrup' unquestionably contains morphia. 2. An overdose of it will produce opium-poisoning as surely as morphia. 3. The parents of the child did not feel at all alarmed about the child because it had taken a large quantity of this *harmless* medicine, as they supposed it to be, and therefore deferred calling a physician till almost too late. 4. The prompt effect of one-sixtieth of a grain of atropia in negativing the effect of this quantity of morphia (the quantity that may be in one-third of a bottle of Bull's syrup). 5. The inutility of one-fifteenth of a grain of apomorphia. And lastly, my sincere thanks to Mr. F. M. Cary, of this city, for his very efficient services." Electricity and atropia saved the child.

CAUTION IN REGARD TO CHRYSOPHANIC ACID.—Physicians prescribing chrysophanic acid should warn their patients against the accident of introducing it into their eyes through rubbing the eyes with their fingers. Dilatation of the pupil ensues, accompanied with intense inflammatory itching and burning, causing much pain for the time it lasts, though the inflammation soon subsides.—*Boston Journal of Chemistry.*

FRENCH POLISHING RAGS, a new article of commerce for readily imparting bright polish to metals, and extensively advertised as "Serviettes Magiques," are made by saturating pieces of woolen cloth, about 70 centimeters in length and 10 cm. in width, with a mixture made by dissolving 4 grams Marseilles soap in 20 grams water, adding 2 grams tripoli and coloring red with a little fuchsin; the cloths are then allowed to dry.—*Pharm. Ztg.*

LIQUID GLUE.—One hundred parts of ordinary gelatine are dissolved in 400 parts of water containing 6 to 7 parts of oxalic acid. The solution is kept for 5 or 6 hours on the water bath, in a porcelain infusion pot, after which it is neutralized with carbonate of calcium, the insoluble precipitate filtered off, and the clear filtrate evaporated at a moderate temperature, until about 200 parts are obtained. The product is a durable, slightly tinted, but clear liquid glue.—*Pharm. Central.*

LUMINOUS FLOWERS.—Among the elegant novelties of the hour now offered for sale on the Paris boulevards are phosphorescent flowers, which glow with a lambent light in the dark, and rival their natural tints. They are rendered luminous by coating the petals with transparent size, and then dusting them with a phosphorescent substance, such as Canton phosphorus (sulphide of calcium) or Bologna phosphorus (sulphide of barium). Canton phosphorus is the best, and yields a soft yellow light. According to M. Becquerel, a good quality can be made by mixing 48 parts of flowers of sulphur with 53 parts of calcined oyster shells, and raising them to a temperature of between 800 and 900 degrees Centigrade in a crucible. After exposure to sunlight during the day, or to electric or magnesium light, the flowers thus coated become brightly luminous in the dark.—*Boston Journal of Chemistry.*

A NEW ALKALOID, which has been named thalictrine, has been obtained from the *Thalictrum macrocarpum*, a plant of the Lower Pyreneos. Two to five milligrams of this substance killed a frog in from twenty to forty minutes. A gram to a gram and a half of the extract injected into the veins of a dog or rabbit kills in five minutes, death being preceded by convulsions, complete abolition of general sensibility, acceleration of the respiration, weakness of the pulse and vomiting.—*Lancet.*

ERYTHROPHLEINE.—MM. See and Bochefontaine are using erythrophleine (*Lancet*) in the different cardiac and respiratory affections. The plant from which it is derived, the *Erythrophleum guineense*, is employed in Africa as an arrow poison. MM. See and Bochefontaine find that erythrophleine increases the vascular tension and first slows the pulse and respiration. Then the respiratory movements are quickened, and when death takes place they persist long after the cessation of the cardiac contractions.

COLORS FOR SHOP WINDOWS.—A very beautiful amethystine color can be produced by dissolving five grains of salicylic acid in a little solution of ammonia, mixing with this two gallons or enough water to fill the show bottle. To this is added a few drops of solution of chloride of iron, and afterward a few drops of muriatic acid.

Emerald green color, of great beauty, can readily be produced by dissolving a few five-cent nickel pieces in equal parts of nitric acid and water, then diluting with sufficient water.—*Am. Jour. Phar.*

COD-LIVER OIL AND IODOFORM.—According to *Progres Med.*, June 19, 1880, Dr. Fonssagrives, having ascertained that the addition of iodoform and essence of anise effectually masks the repulsive taste of cod-liver oil, always employs this combination in cases where the union of iodine with cod-liver oil is indicated, iodine being conveyed into the economy in a larger proportion by means of iodoform than by any other preparation. Patients, after comparing this mode of taking cod-liver oil with the ordinary modes, unanimously declare in favor of the taste and smell of the former. To one hundred grams of the oil a quarter of a gram of iodoform and ten drops of the anise seed are added.

SURFACE TENSION OF MERCURY.—The following pretty experiment, devised by Mr. R. H. Ridout, illustrates the surface tension of mercury. A shallow tray, six inches by three, is supported on three leveling screws, and inclined just so that the mercury does not flow over the lipped edge. If now a small quantity of the liquid be set flowing over the edge it will draw the rest of the liquid over with a siphon-like action. It is difficult, however, to get the surface so clean that no adherent trail should be left, marring the completion of the experiment.—*Scientific American.*

DR. UNGER'S CURE FOR DRUNKENNESS.—Take one pound of best, fresh, quill red Peruvian bark, powder it, and soak it in one pint of diluted alcohol. Afterward strain and evaporate it down to half a pint. Dose—a teaspoonful every three hours the first and second day, and occasionally moisten the tongue between the doses. It acts like quinine, and the patient can tell by a headache if he is getting too much. The third day take as previous, but reduce the dose to one-half teaspoonful. Afterward reduce the dose to fifteen drops, and then down to ten, and then down to five drops. To make a cure, it takes from five to fifteen days, and extreme cases thirty days. Seven days are about the average in which a cure can be effected.

CLASSIC DENTISTRY.—Dr. Xavier Landerer, of Athens, sends the following to the London *Chemist and Druggist:* "It may be safely asserted that the ancients certainly cleaned their teeth and used tooth powder. If the necessary attention were given, relics would be found in the graves of the women. The word *odontotrimma*, the tooth-scouring stuff or tooth powder, is found in ancient Greek, and in the Greek Pharmacopœia is applied to tooth powder. It is interesting to find that the ancients had made some advance in destistry. A friend of mine (now dead) occupied himself in collecting ancient Hellenic skulls, wishing to show that they did not differ in shape from those now carried in Greece. Among several hundreds of these skulls, some perhaps 2,000 years old, we found two with 'stopped' teeth. One was filled with a mass as hard as stone, which, on analysis, proved to be hydraulic lime, made from volcanic ash, Santorin earth, and lime. Marvellous as it may seem, the hollow of one tooth in the other skull had been filled with gold thread or gold leaf. The metal used was pure. The skull itself, though deprived of the stopping, is now in the Archæological Museum."

DANGER ATTENDING ADMINISTRATION OF CHIAN TURPENTINE.—Mr. William F. Marsh Jackson writes to the *British Medical Journal:* A patient of mine suffering from cancer of the pancreas, eager to catch at any straw, procured, unknown to me, a box of chian-turpentine pills from Mr. Clay, of Birmingham. She took in all about thirty pills, when, finding herself no better, but rather worse, she discontinued the medicine. She began the pills on April 27th. On May 25th, or about three weeks after taking the last pill, she vomited a solid, sticky, yellow, fish-shaped mass, smelling strongly of turpentine, weighing one hundred grains, and measuring two inches and a half by three-quarters of an inch, and being in depth a quarter of an inch, apparently a crude undigested block of chian turpentine.

IS SALICYLIC ACID INJURIOUS TO THE TEETH?—The *Journal of Materia Medica* for April, 1880, observes that salicylic acid, now so much in use as a dentifrice, is found, by Dr. Buch, of St. Petersburg, to be a solvent, and exceedingly injurious. Dr. Buch states that he was in the habit of using a solution of three parts in one thousand of salicylic acid, a lotion of such strength being fatal to bacteria; in a few weeks, however, he experienced a singular sensation in his mouth; the teeth appeared to become softer, and on the surface something gritty was detected, there being evidently a granular formation.

Dr. Buch's conclusion is that the substance in question is a salicylate of lime, and, if so, the use of the acid as a dentifrice should be discontinued.—*Medical and Surgical Reporter.*

PREPARATION OF PHOSPHORIC ACID.—Phosphoric acid may be readily prepared by covering a stick of vitreous phosphorus with water, adding a crystal or two of iodine and some nitric acid, and allowing the mixture to stand for 24 to 36 hours. After the oxidation is complete, the solution is evaporated and treated as the Pharmacopœia directs. The advantages presented by this method are economy of material and consequent safety, and the indefinitely large quantities of phosphorus which can be oxidized by a very small quantity of iodine. The theory of the process is based on the discovery of Brodie (*Jour. Chem. Soc.*, 1852, p. 289), that the iodine converts the vitreous phosphorus into the amorphous variety, which is oxidized by the nitric acid. This method differs from that of Pettenkoffer, who treats phosphorous iodide with water, and obtains phosphorus acid, which is oxidized by nitric acid.—*Phar. Jour. and Trans.*

SINGULAR EFFECTS OF NITRO-GLYCERIN.—A correspondent of the *British Medical Journal* gave, in the case of a lady suffering with cramps in the stomach, something less than a drop of a one per cent. alcoholic solution of nitro-glycerin. In two minutes the pulse fell from 140 to 50, a clammy sweat covered the patient's features, and she became senseless. Stimulants to the nose and brandy were quickly given, and in about three minutes more she began to recover. The pain was completely gone, and did not return all that night or the following day. The patient said she felt like two people, and so strong was this impression that, though perfectly rational in her conversations and unexcited in her manner, she could not shake it off, but frequently checked herself when about to make allusion to her imaginary double.

IMITATION OF ICE FOR SKATING.—A new skating surface, called "crystal ice," has been invented by Dr. Calantarients, of Scarborough, England. Considering that after all ice is merely a crystalline substance, and that there is no lack of substances that are crystalline at ordinary temperatures, Dr. Calantarients experimented with a variety of salts, and after a time succeeded in making a mixture consisting mainly of carbonate and sulphate of soda, which, when laid as a floor by his plan, can be skated on with ordinary ice skates; the resistance of the surface is just equal to that of ice, it looks like ice, and indeed when it has been skated on, and got "cut up" a little, the deception is quite astonishing; a small experimental floor has been laid in the skating rink at Prince's, and has proved so successful that no doubt a large floor will be laid there or at some other convenient place in the autumn. This floor will obviously have great advantages, both over artificial ice floors, which are very expensive indeed, and over floors for roller skating. The surface can at any time be made smooth again by steaming with an apparatus for the purpose, and the floor itself, when once laid, will last for many years. The mixture of salts used contains about sixty per cent. of water of crystallization, so that after all the floor consists chiefly of solidified water.—*Druggists Circular and Chemical Gazette.*

THE MANUFACTURE OF IODINE IN SOUTH AMERICA.—According to the London *Medical Record*, June 15th, 1880, the province of Tarapaca, in Peru, now contains eight manufactories in full work, which produce annually 140,000 kilograms of iodine. Three other manufactories are in course of construction, and the production of iodine in 1879 has attained from 150,000 to 200,000 kilograms. Different processes are used to extract iodine from the waters of saltpeter. The first process consists in precipitating the iodine with a determined quantity of sulphate of sodium, and the iodine is afterward extracted, after having been washed, filtered, etc. The second method consists in adding to the water either sulphate or bisulphate of sodium, until the iodine is transformed into iodohydric acid, which is precipitated by the aid of a solution of chloride of copper. In the first method the crystallization process is used, then the mother waters are distilled with a quantity of bisulphate of sodium equivalent to the density of the iodine.

A NEW ANÆSTHETIC.—J. T. Clover writes to the *British Medical Journal* as follows: "In your last number mention is made of a new anæsthetic, described as a combination of nitrous oxide gas and ethy*len* dichloride, and introduced in Edinburgh by Mr. Macleve.

I have not used the ethylen dichloride, but I suspect that the substance alluded to is ethidene dichloride, and I have been giving this with laughing gas for the last fifteen months to more than a thousand cases in hospital and private practice. On the whole, I think ethidene dichloride a better anæsthetic than ether or chloroform, and can confirm all that Mr. Macleve says of it; but I have found that when given beyond a certain strength it causes vomiting and depression of the heart's action; and I fear that the plan recommended, of pouring it on a sponge in the tube or supplemental bag, without the means of regulating the strength of the vapor, will produce ere long results less satisfactory. It will be found that half a drachm is not always sufficient; and, if a larger quantity be used and it run through into the inhaler, the dose may be made strong enough to produce serious results. Chloroform applied in the same way would answer very well in the majority of cases; but in an exceptional one it would yield the vapor too abundantly for safety.

I have found a small-sized gas and ether inhaler answer my purpose; but I have no doubt the portable regulating ether inhaler, charged with about two-thirds of the usual supply of ether, would do equally well. In all cases of ethidene inhaling, the pulse should be watched as well as the breathing."

COST AND VALUE OF THE CINCHONA ALKALOIDS.—Dr. Hager, in a paper in the *Bunzlauer Pharmaceutische Zeitung*, gives the results of some experiments made on himself to decide this question. Pills containing considerable doses of the alkaloids were used to relieve catarrh, and the antipyretic value and cost in shillings for 100 grams are given in the following table:

| | Antipyretic Value. | Cost. |
|---|---|---|
| Quinine sulphate | 100 | 95 |
| Quinidine sulphate | 90 | 55 |
| Cinchonidine sulphate | 70 | 30 |
| Cinchonine sulphate | 40 | 10 |

This table means that 2½ grains of cinchonine sulphate in a dose will produce the same antipyretic effect as 1 grain of quinine in a dose, which costs four times as much.

POISONING BY ACONITIA.—We find in *Apoth. Zeit.* the following singular case: A Dutch physician had occasion frequently to prescribe nitrate of aconitia, always specifying the "German" preparation. Being once in a hurry, he left out the word "German," thinking, since his prescription went to the same drug store, it would be recollected that he never meant any other preparation than the German, which they had so often dispensed. The prescription this time was a solution of three grains of nitrate of aconitia in three ounces of tincture of chenopodium ambrosioides, to be taken in doses of twenty to forty drops, as occasion required. But it so happened that the apothecary in question had no "German" aconitia nitrate in stock, and substituted for it the "English" article.

The patient felt so unwell after the first dose that the physician was called. The latter, in order to quiet the patient, took himself sixty drops of the medicine at one dose, but he very soon felt the effects, went to the apothecary, and ascertained that the English preparation, which is very much stronger than the German, had been substituted. The physician had barely time to prevent the patient from taking another dose, and almost immediately died himself.—*Druggists Circular and Chemical Gazette.*

DETECTION OF FREE MINERAL ACIDS IN VINEGAR.—Mr. F. Masset recommends to use sodium salicylate as a reagent for this purpose. This salt is decomposed with liberation of salicylic acid, by all the mineral acids in a free state, as well as by some of the stronger organic acids, such as tartaric or oxalic. But acetic acid does not decompose it at once, although it does so after a considerable time. About one or two fluid drachms of the vinegar (or acetic acid) to be examined is poured into a test tube, and twenty to thirty minims of a twenty per cent. solution of sodium salicylate are then added. If any mineral acid was present, salicylic acid will be liberated in flocculent masses, and in quantity corresponding to the mineral acid present. This is, of course, only a preliminary test; if it yields evidence of the presence of the suspected impurity, the nature of the latter must be determined by the usual analytical methods.—*Journal de Pharm. d'Anvers.*

NITRO-GLYCERIN.—Nitro-glycerin can be prepared for use in a solution either of alcohol or ether, a one per cent. solution in alcohol being that generally preferred. It being also soluble in melted cocoa butter, this has been employed for making it into pills, but in this form it does not act so quickly as in alcoholic solution. A better plan than this is to add an equal quantity of chocolate paste to this pill mass, and then make it up into lozenges of any desired size, which it would not be disagreeable to chew up in the mouth, and thus gain rapid absorption. Nitro-glycerin bids fair to prove an anti-neuralgic of the greatest value, especially in cases of angina pectoris and such other affections as nitrite of amyl has hitherto been much used in, taken at intervals of two to four hours, in doses of about two drops of the one per cent. solution, and increased until full physiological action is obtained. The relaxed condition of the blood vessels induced lasts usually about half an hour. Doses of the above strength and frequency have been continued through several consecutive days with safety and success in warding off threatening attacks of angina pectoris in cases in London hospitals.—*Louisville Medical News.*

REMOVAL OF GREASE SPOTS.—Fatty oils have a greater surface-tension than oil of turpentine, benzole or ether. Hence, if a grease spot on a piece of cloth be moistened on the reverse side with one of these solvents, the tension on the greasy side is larger, and therefore the mixture of benzole and fat or grease will tend to move towards the main grease spot. If we were to moisten the center of this spot with benzole, we would not remove it, but drive the grease upon the clean portion of the cloth. It is, therefore, necessary to distribute the benzole first over a circle surrounding the grease spot, to approach the latter gradually, at the same time having blotting paper in contact with the spot to absorb the fat immediately.

Another method, namely, to apply a hot iron on one side, while blotting paper is applied to the other, depends upon the fact that the surface tension of a substance diminishes with a rise of temperature. If, therefore, the temperature at different portions or sides of the cloth is different, the fat acquires a tendency to move from the hotter parts towards the cooler.—*Maxwell.*

NITROGEN, CHLORINE AND SULPHUR: THEIR RAPID AND EASY DETECTION IN ORGANIC COMPOUNDS—(P. Spica).—The substance to be examined is heated with sodium in a test tube, and the product dissolved in water, as in the ordinary way of testing for nitrogen by Lassaigne's process; the solution will then contain the nitrogen in the state of cyanide, the sulphur as sulphide, and the chlorine, bromine or iodine as chloride, bromide or iodide, if these elements be present. A drop of the alkaline liquid placed on a clean silver surface will at once produce a black stain if a sulphide has been formed, whilst the cyanogen may be detected by the Prussian blue test in a portion of the liquid. If neither of these is present, the halogen may be at once tested for in another portion of the solution by adding nitric acid and silver nitrate, but if a sulphide or cyanide is present it must be first destroyed by mixing the solution with about half its bulk of pure sulphuric acid and heating for a short time before adding the silver nitrate.—*Gazetta Chim. Ital.* and *Journ. Chem. Soc.*

THE ACTION OF CHLORATES ON IODIDES—(R. H. Parker).—The author having seen potassium chlorate prescribed in combination with syrup of iodide of iron, and having noticed a remarkable change and evident decomposition of the mixture, has studied the reactions occurring in the mixture.

When a solution of potassium chlorate is mixed with syrup of iodide of iron, a nearly colorless solution is obtained, which, on standing a few hours, acquires a reddish-brown color and an evident odor of iodine. This change is followed by the subsidence of a red precipitate and deeper color of the supernatant liquid; in a few days the solution becomes supersaturated with iodine, and crystals of the latter element are deposited. Sodium chlorate produces a similar decomposition. The author concludes that the products of the reaction are: ferric oxide containing only one molecule of water, iodine and potassium chloride, thus:

$$2FeI_2+KClO_3+H_2O = Fe_2O_3H_2O+2I_2+KCl.$$

—*Pharm. Jour.*

EFFECTS OF OIL OF TANSY.—Dr. G. Jewett, *Boston Medical and Surgical Journal*, reports eight cases of poisoning with this drug. Case 1. Fifteen drops at 11 A. M., a teaspoonful at 2 P. M.; convulsions, shock, general cyanosis; recovery. Case 2. Teaspoonful to promote catamenia; convulsions, and death in one hour and a half. Case 3. Unknown quantity to cause abortion; convulsions; death in three hours and a quarter; no abortion. Case 4. Teaspoonful to cause abortion; coma; recovery; no abortion. Case 5. Four drachms: spasms and death. Case 6. To cause abortion; rapid death; no abortion. Case 7. Decoction of tansy leaves to produce abortion; paralysis; coma; death in twenty-four hours, without abortion. Case 8. Infusion of leaves daily for a week; also for vaginal injection: abortion, metritis, peritonitis; recovery after three months.

As druggists are often asked for oil of tansy under various pretenses, we believe the above table will be useful in reminding them of the dangers attending the sale of tansy and its preparations.

PISCIDIA ERYTHRINA.—Piscidia Erythrina, L., Jamaica Dogwood, at one time called by Linne erythrina piscipula, "the fish-catching coral tree," belongs to the natural family Leguminosæ. It is a native of the West Indies, chiefly growing in arid districts on the mountains of the Antilles. It is most frequent on Jamaica. When full grown, it attains a height of twenty to twenty-five feet, has a bright-colored, smooth bark and very irregular spreading branches. The leaves are twice or thrice pinnatified, somewhat coriaceous, covered with a fine down when young, afterward becoming almost glabrous and deciduous. Leaflets about two inches long, twelve to sixteen lines broad, and pointed. Panicles are bushy, many-flowered, and make their appearance before or together with the leaves. Calyx, brownish-red, covered with grayish hairs; campanulate, five-sepalous; corolla, papilionaceous and whitish, with roundish emarginate standard, and with obliquely-ovate alæ, having blood-red veins. Keel curved, blunt and bifid, with a blood-red point. Legume, linear, quadri-alate, about three inches long, constricted between the seeds; alæ, broader than legume. Seeds, oblong-oval, compressed. Tree flowers in March and April.

The bark of this tree, particularly that of the root, is used in the West Indies for catching fish. When thrown into ponds or quiet waters, the fish become stupefied and are easily caught.* Small fish are killed by it. Fish caught in this manner are eaten without hesitation and are not considered unwholesome. An infusion of the bark of the root has also been used for cleaning foul ulcers. A tincture prepared from the root bark is known to possess strongly diuretic properties. It is also a powerful narcotic and diaphoretic and has enjoyed the reputation of being a specific in toothache.†

The usual method of employing the drug for catching fish is the following: At the time of the full moon in April the leaves, twigs and root bark are collected, macerated with the residue from the distillation of rum or with lime-water, then transferred into baskets, and the latter dragged up and down the water, until the active principle has been extracted, which causes the fish to be stupefied and to rise to the surface.

We have seen the name of manaca lately applied to this plant in several journals; but we cannot now ascertain on whose authority. In Brazil, the name manaca is applied to Brunfelsia Hopiana Benth. (=Franciscea uniflora Pohl.), according to B. Seemann.

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* This remarkable narcotization of fishes is ascribed to many other plants, particularly to Cocculus Indicus, Tephrosia toxicara (specially cultivated for this purpose in Guiana), etc.

† Compare Buchner's Rep., I., 215. Pharm. Central Bl., 1835, 413.

In South America the bark of piscidia carthagensis, L., is used by the natives likewise for stupefying fish.

Recent medical authorities report that the action of piscidia erythrina, when taken internally, appears to be a direct sedative to the nerve-centers; that it causes sleep without producing the cerebral hyperæmia which often follows opium and its active principles. The sleep is tranquil and refreshing; it is said to soothe bronchial cough and to moderate the paroxysms of asthma and nervous coughs. In view of the fact that opium is often not well borne, when an anodyne and hypnotic is required, it seems that the drug in question deserves further study. The usual dose is five minims of the fluid extract. It would be desirable to make an analysis of the plant with a view to discover its active principles.—*New Remedies.*

MEDICAL LAKES OF EASTERN WASHINGTON.—In the neighborhood of Silver Lake, and about sixteen miles southwest of Spokane Falls, Washington Territory, are two small lakes, known as the medicated lakes, which are likely to become a great resort for invalids.

One lake is a mile and three-quarters long and three-quarters of a mile wide; the other a trifle smaller. They are about a mile apart. For ordinary bathing they are said to be delightful. The water invigorates and refreshes the whole system and leaves the skin soft and oily.

An analysis of these waters, by Dr. R. G. Rex, of Portland, Oregon, shows the following constituents:

Granite Lake.—Solid matter, 256 grains to the gallon, consisting of carbonate of soda and potassa, 160 grains; chloride of sodium and potassium, 64 grains; organic matter, silica, alkaline sulphates, etc., 32 grains.

Medical Lake.—Solid matter, 192 grains to the gallon; carbonate of soda and potassa, 120 grains; chloride of sodium and potassium, 48 grains; organic matter, silica, alkaline sulphates, etc., 24 grains. —*Scientific American.*

## REVIEW OF CHICAGO DRUG MARKET.

Trade continues remarkably good, and, owing to the unusual influx of visitors to the conclave of Knights Templar, the past week has been one of the most active ever known to the trade in Chicago. With abundant harvests secured throughout the country, the prospects for a large fall business are excellent, and this will most likely cause an advance on many goods. The demand for quinine and cinchonidia is not heavy, there being less than the usual amount of sickness at this time of the year, and therefore no particular change is likely to occur in their values. Opium has again taken an upward turn, but it is impossible to say how it will rule in the immediate future. Lard oils have advanced largely; spirits turpentine is also higher. Glycerin has been advanced by manufacturers two cents per pound. Shellacs are also higher.

| | | |
|---|---|---|
| Acid, Nitric | lb. | 12 @ 14 |
| " Tartaric | " | 54 @ 56 |
| Aloes | " | 16 @ 50 |
| Amm., Carbonate | " | 22 @ 25 |
| " Muriate | " | 14 @ 16 |
| Bleaching Powder | " | 4 @ 5 |
| Blue Vitriol | " | 10 @ 12 |
| Borax | " | 11 @ 13 |
| Camphor | " | 28 @ 30 |
| Cantharides | " | 1.25 @ 1.40 |
| Cassia | " | 24 @ 26 |
| Castile Soap | " | 8½ @ 17 |
| Chamomile Flowers | " | 30 @ 38 |
| Cinchonidia, oz. bots | oz. | 1.05 |
| Cloves | lb. | 43 @ 45 |
| Cream Tartar (pure) | " | 36 @ 38 |
| Cubebs | " | 20 @ 22 |
| Cuttle Fish Bone | " | 26 @ 28 |
| Ergot | " | 65 @ 75 |
| Ginger, Afr | " | 10 @ 15 |
| " Jam | " | 25 @ 30 |
| Glycerin | " | 22 @ 85 |
| Insect Po | " | 60 @ 70 |
| Iodine, Resub | " | 4.50 @ 4.75 |
| Ipecacuanha Po | " | 1.50 |
| MERCURIALS— | | |
| Blue Pill | " | 50 @ 53 |
| Calomel | " | 68 @ 70 |
| Corrosive Sub | " | 58 @ 60 |
| Mercurial Oint | " | 48 @ 56 |
| Red Precipitate | " | 78 @ 80 |
| Morphia Sul. P. & W. ⅛ oz. | | 4.75 @ 5.00 |
| Nutmegs | lb. | 1.10 |
| Oil, Anise | " | 2.00 @ 2.25 |
| Arnica Flowers | lb. | 19 @ 22 |
| Assafœtida | " | 23 @ 25 |
| Balsam Copaiba | " | 65 @ 70 |
| " Tolu | " | 75 @ 80 |
| Bees-wax | " | 30 @ 33 |
| Oil Bergamot | " | 3.00 @ 3.25 |
| " Cassia | " | 1.25 @ 1.35 |
| " Castor | gll. | 78 @ 88 |
| " Lemon | lb. | 3.50 @ 3.75 |
| " Olive | gll. | 80 @ 3.50 |
| " Pennyroyal | lb. | 1.25 @ 1.30 |
| " Peppermint | " | 3.25 @ 4.00 |
| " Sperm (pure) | gll. | 1.35 @ 1.40 |
| " Wintergreen | lb. | 3.00 @ 3.25 |
| " Roses | oz. | 5.00 @ 8.00 |
| Opium, prime | lb. | 7.50 |
| Pepper, Cayenne | " | 28 @ 30 |
| Potass., Bromide | " | 38 @ 45 |
| " Chlorate | " | 22 @ 25 |
| " Iodide | " | 3.00 @ 3.10 |
| Quicksilver | " | 55 @ 60 |
| Quinine, P. & W., 1 oz. btls. | | 3.05 |
| Salicin, 1 oz. vials | oz. | 40 @ 45 |
| Santonin, 1 oz. vials | " | 70 @ 75 |
| Seed, Canary | lb. | 3¾ @ 4½ |
| " Hemp | " | 3¾ @ 4½ |
| Senna | " | 18 @ 25 |
| Seneka Root | " | 70 @ 75 |
| Shellac | " | 43 @ 50 |
| Soda, Bicarb | " | 4 @ 6 |
| " Sal | " | 1¾ @ 3 |
| Squills | " | 14 @ 16 |
| Sugar, Lead, white | " | 17 @ 20 |
| Tonqua Beans, Angostura | " | 2.50 @ 2.75 |

# THE PHARMACIST.

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# EDITORIAL.

## FUCUS VESICULOSUS.

This substance has been subjected to another examination by Mr. Frisbie, of the *American Journal of Pharmacy*, with the result below indicated:

SUMMARY.

| | | |
|---|---|---|
| A | Water | 2.26 |
| | Ash | 1.59 |
| | Organic matter | 6.15=10 |
| B | Potassium chloride | .348 |
| | Sodium iodide | .252 |
| | Sodium bromide | .324 |
| | Magnesium phosphate | .312 |
| | Calcium phosphate | .225 |
| | Calcium sulphate | .138=1.599 |

Mr. Frisbie also tried the drug therapeutically, and thus relates his experiment and experience in this respect:

"*Medical Action.*—I restricted myself to dieting, which consisted in excluding from my food, as nearly as possible, all carbonaceous substances. No excess of exercise; sunlight; no liquids of any kind that contained any carbon. I commenced taking the fluid extract one drachm doses four times daily, before meals and at bed-time.

This was continued for five days. From that time the dose was increased to two drachms; this continued for five days. (At this point my urine showed signs of coloration.) The dose was then increased to half an ounce; at the expiration of four days my urine was decidedly colored, and had an extremely offensive odor, and when permitted to stand a separation of fat could be seen on top. On the fifteenth day I found I had lost in weight 1½ pounds, and on the twentieth day I had lost 4¾ pounds. The above experiments are all that I have so far made."

By "carbonaceous substances" he probably means substances very rich in carbon, as the carbo-hydrates, as we know of no food, except a few necessary mineral matters, which does not abound in carbon. With such a diet, colored water, or nothing at all, would no doubt produce as great results. It is about time that fucus vesiculosus should be retired into the grand museum of *Tekel* (Daniel, 5. 27).

## THE METRIC SYSTEM.

The American Medical Association, at its late meeting, recommended the adoption of the metric system by both pharmacists and physicians. That this system has undoubted advantages over our mixed and confusing methods of representing weight, capacity and dimensions, is too obvious to require argument; but while sugar, flour, and groceries in general, sell by the pound, the people will not have drugs by the kilogram; while milk, vinegar, syrups, kerosene and liquors are sold by the pint, quart and gallon, the pharmacist cannot sell his liquids by the liter; nor can physicians with safety prescribe and give directions for use in the language of the metric system until the people understand its terms. But the people will never comprehend and use these terms until the improvement is forced upon them by general legislation. Congress could at once inaugurate the system by directing the use of the metric system in the Army and Navy Departments, and especially in the Revenue Departments. Whenever the tax on tobacco, for example, is made so much per kilogram, the whole traffic in that article will at once be conducted by metric weights, and as a result most of the people would soon learn the names and values of the new weights. If all liquors were taxed by the liter or dekaliter, they would be retailed by metric measures; and in like manner the levying of all duties and taxes on quantities expressed in the terms of the metric system would soon lead to, nay *compel*, its general adoption in commerce. We have before expressed the same view of this question, and wonder that any other plan should be thought feasible.

The recommendation of the American Medical Association, like the numerous decrees and appeals heretofore issued by various scientific associations, will prove of no avail, except possibly to slightly increase the present confusion and uncertainty.

We believe that we echo the sentiments of ninety-nine per cent. of those engaged in prescribing and dispensing drugs, when we say that we do not want the metric system unless we can have it to the total exclusion of our present weights and measures.

## OBITUARY.

From private correspondence we learn that William S. Merrell, of Cincinnati, was buried on the 6th of this month. Mr. Merrell was about eighty years old and had for several years been calmly awaiting and expecting death. He was almost an encyclopædia of general knowledge, and was particularly well acquainted with the indigenous materia medica of this country. In his younger and more ambitious days he lectured on chemistry in the old Ohio Medical College. About thirty years ago he organized the business in which he has since been exclusively engaged. For a long time his warehouse was the only respectable depository of indigenous drugs in the West, and was not even equaled in the East.

Constitutionally and practically he was an honest man, always averse to the "tricks of the trade."

The business, in which indeed he has taken no part for several years, will of course proceed as before, and probably under the old firm name.

ERRATUM.—In our September number, under heading, "Elixir Bromide Potassium," the name "Simple Elixir" was attached to the formula for spirit of orange, two drachms of which, with ten mimims of spirit of cinnamon, alcohol four ounces and water and simple syrup each six ounces, constitute the simple elixir.

## POISON IN PRESCRIPTIONS.

New York, Sept. 8.—At a meeting of the Board of Aldermen an ordinance was adopted requiring all druggists and other persons engaged in the compounding of physicians' prescriptions to keep all poisonous substances separate from harmless drugs, and in an apartment provided especially for the purpose, which is to be marked in large letters with the word "Poison." The department is to be kept securely locked in drug stores and dispensaries, and is to be opened only when necessary for the filling of prescriptions, in the presence of the person bearing the prescription.—*Associate Press Dispatch in Chicago Tribune.*

The question will now arise, What is harmless and what is poisonous? According to our knowledge and belief, the poison department will include nearly the entire stock of drugs, chemicals and preparations. In filling almost every prescription the customer will be compelled to witness and supervise the opening of the great "poison room." Many of the best patrons, both of physicians and pharmacists, never dream that their potions contain "pizen," and we can imagine the protrusion of their occular organs hereafter in New York as they walk up to the door labeled *poison department* and witness the taking therefrom of one or more ingredients of almost every prescription. As the drug-taking proclivity of our people is steadily declining, in spite of the best efforts to make medicines tasteless or palatable, we hope that business will not be further depressed here by such attempts to regulate pharmacy.

After all, the only security against accidents is competence and carefulness on the part of those who dispense. A poison case is indeed useful as a check against the most dangerous poisons, but it is not impossible to cause great damage or death by taking from the case the wrong poison.

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Toxic Effect of Quassia.—A writer in the *Lancet* gives the particulars of a case of poisoning by quassia used in the form of an enema. The patient was a girl aged four years, to whom the enema was given to relieve prolapsus recti, supposed to be caused by ascarides. The symptoms came on soon, and were unconsciousness, great prostration, contracted pupils, absence of pulse, slow and imperfect respiration. By the aid of stimulants and excitants reaction was finally induced, resulting in recovery. While on the subject, we may add that the infusion of quassia rubbed on the skin will *not* prevent the attacks of mosquitoes, as has been so often asserted.

## CHICAGO COLLEGE OF PHARMACY.

Lectures at the Chicago College of Pharmacy will begin Monday, October 4th, at 2 P. M. Students not already here should lose no time in coming, because the first lectures are to some extent the key to subsequent ones. Tickets and information may be obtained of Mr. Whitfield, 240 Wabash avenue, opposite the College. The lectures will be given in accordance with the following schedule:

### LECTURE CARD, SESSION 1880–81.

Monday—Bartlett, 2 to 3 P. M.; Garrison, 3 to 4 P. M.; Bastin, 4 to 5 P. M. Wednesday—Hambright, 2 to 3 P. M.; Garrison, 3 to 4 P. M.; Bastin, 4 to 5 P. M. Friday—Bartlett, 2 to 3 P. M.; Hambright, 3 to 4 P. M.

*Chemistry*—Prof. N. Gray Bartlett, 92 Twenty-second street; *Pharmacy*—Prof. G. M. Hambright, cor. Twelfth and State streets; *Materia Medica*—Prof. H. D. Garrison, 58 Thirty-first St. *Botany*—Prof. E. S. Bastin, Chicago University.

*Laboratory Instruction* from 9 to 12, daily, (except Sunday,) by Prof. Plym Hayes.

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SANTONIN CONTAMINATED WITH STRYCHNIA.—Strychnia is stated to be a common impurity in commercial samples of santonin. Forquate Gigli recommends for its detection, in preference to Fluckiger's method, the following process: One gram of the sample is placed in a small beaker, covered with a little distilled water and acidulated with a few drops of sulphuric acid. On agitating with a glass rod the strychnia dissolves, while the santonin remains insoluble. The liquid is filtered, the residue washed with a little water and the washing added to the filtrate, which is then distributed in several test glasses and examined for strychnia by means of the usual reagents.—*Chem. News*, *Am. Jour. Phar.*

Observing this item going the rounds of the scientific press, we deem it proper to say that there is probably not a word of truth in it. Some careless clerk of a dealer or maker may have mistaken some strychnia crystals for santonin, on account of the resemblance, and thrown them into the santonin container; but since strychnia costs twice as much as santonin, only an idiot would use the former to adulterate the latter. A search for santonin in your strychnia bottles would be more philosophical.

BURNS, SCALDS, ETC.—The *Allg. Hopfen-Zeit.* says that one of the best but least known agents for the cure of burns, scalds, etc., is oil of peppermint. Applied to the wound with a camel's hair pencil or cloth, it promptly relieves the pain, and rapidly cures without leaving a scar. It recommends the immersion of the burnt part in water before applying the oil. It is sometimes advisable to dilute the oil one-half with glycerin, and when in this form it is said to be an excellent application for frozen extremities.

THE PHARMACISTS OF CHICAGO and vicinity are again reminded that a large number of young men, now arriving in the city to attend the lectures at the College of Pharmacy, desire situations during the lecture term. As the lectures only consume three half-days per week, students not engaged in laboratory work are able to give five and a half days per week to their employers. It is worthy of remark that the most thrifty of our druggists usually take in one or two students every term. Applications should be made personally or by mail to Thos. Whitfield, 240 Wabash avenue.

A GOOD FILLING FOR TEETH.—A filling that has been used very successfully for teeth, and which is next to gold leaf in permanency, is made of the following ingredients:

| | |
|---|---|
| ℞ Oxide of zinc (recently made by burning) | 200 parts. |
| Powered silica | 8 |
| borate of soda | 4 |
| glass | 5 |

Mix and pass through a very fine sieve. To be kept in a well-stoppered bottle.

When required for use, a little of the powder is mixed quickly with a concentrated solution of chloride of zinc, so as to make a thick paste, which is pressed into the cavity of the tooth, and will harden in less than ten minutes. It forms a hard white cement, which will last for years.—*Am. Jour. Phar.*

# SELECTIONS.

## PROF. CROOKES ON THE FOURTH STATE OF MATTER.

I had no time then to enter fully into the subject; nor was I prepared, on the spur of the moment, to marshal all the facts and reasons which have led me to the conclusion. But as I find that many other scientific men besides Dr. de la Rue are in doubt as to whether matter has been shown to exist in a state beyond that of gas, I will now endeavor to substantiate my position.

I will commence by explaining what seems to me to be the constitution of matter in its three states of solid, liquid and gas.

(1.) First as to solids: These are composed of discontinuous molecules, separated from each other by a space which is relatively large—possibly enormous—in comparison with the diameter of the central nucleus we call *molecule.* These molecules, themselves built up of *atoms*, are governed by certain forces. Two of these forces I will here refer to—attraction and motion. Attraction when exerted at sensible distances is known as gravitation, but when the distances are molecular it is called *adhesion* and *cohesion.* Attraction appears to be independent of absolute temperature; it increases as the distance between the molecules diminishes; and were there no other counteracting force the result would be a mass of molecules in actual contact, with no molecular movement whatever—a state of things beyond our conception—a state, too, which would probably result in the creation of something that, according to our present views, would not be *matter.*

This force of cohesion is counterbalanced by the movements of individual molecules themselves, movements varying directly with the temperature, increasing and diminishing in amplitude as the temperature rises and falls.

The molecules in solids do not travel from one part to another, but possess adhesion and retain fixity of position about their centers of oscillation. Matter, as we know it, has so high an absolute temperature that the movements of the molecules are large in comparison with their diameter, for the mass must be able to bear a reduction of temperature of nearly 300° C. before the amplitude of the molecular excursions would vanish.

The state of solidity, therefore—the state which we are in the habit of considering *par excellence* as that of *matter*—is merely the effect on our senses of the motion of the discrete molecules among themselves.

Solids exist of all consistencies, from the hardest metal, the most elastic crystal, down to thinnest jelly. A perfect solid would have no viscosity, *i. e.*, when rendered discontinuous or divided by the forcible passage of a harder solid, it would not close up behind and again become continuous.

In solid bodies the cohesion varies according to some unknown factor, which we call chemical constitution ; hence each kind of solid matter requires raising to a different temperature before the oscillating molecules lose their fixed position with reference to one another. At this point, varying in different bodies through a very wide range of temperature, the solid becomes liquid.

(2.) In liquids the force of cohesion is very much reduced, and the adhesion or the fixity of position of the centers of oscillation of the molecules is destroyed. When artificially heated, the inter-molecular movements increase in proportion as the temperature rises, until at last cohesion is broken down, and the molecules fly off into space with enormous velocities.

Liquids possess the property of viscosity—that is to say, they offer a certain opposition to the passage of solid bodies ; at the same time they cannot permanently resist such opposition, however slight, if continuously applied. Liquids vary in consistency from the hard, brittle, apparently solid pitch, to the lightest and most ethereal liquid capable of existing at any particular temperature.

The state of liquidity, therefore, is due to intermolecular motions of a larger and more tumultuous character than those which characterize the solid state.

(3.) In gases the molecules fly about in every conceivable direction, with constant collisions and enormous and constantly varying velocities, and their mean free path is sufficiently great to release them from the force of adhesion. Being free to move, the molecules exert pressure in all directions, and were it not for gravitation they would fly off into space. The gaseous state remains so long as the collisions continue to be almost infinite in number, and of inconceivable irregularity. The state of gaseity, therefore, is pre-eminently a state dependent on collisions. A given space contains millions of millions of molecules in rapid movement in all directions, each molecule having millions of encounters in a second. In such a case, the length of the mean free path of the molecules is exceedingly small compared with the dimensions of the containing vessel, and the properties which constitute the ordinary gaseous state of matter, which depend upon constant collisions, are observed.

What, then, are these molecules? Take a single lone molecule in space. Is it solid, liquid, or gas? Solid it cannot be, because the idea of solidity involves certain properties which are absent in the isolated molecule. In fact, an isolated molecule is an inconceivable entity, whether we try, like Newton, to visualize it as a little hard spherical body, or, with Boscovich and Faraday, to regard it as a center of force, or accept Sir William Thomson's vortex atom. But if the individual molecule is not solid, *a fortiori* it cannot be regarded as a liquid or gas, for these states are even more due to inter-molecular collisions than in the solid state. The individual molecules, therefore, must be classed by themselves in a distinct state or category.

The same reasoning applies to two or to any number of continuous molecules, provided their motion is arrested or controlled, so that no collisions occur between them; and even supposing this aggregation of isolated non-colliding molecules to be bodily transferred from one part of space to another, that kind of movement would not thereby cause this molecular collocation to assume the properties of gas; a molecular wind may still be supposed to consist of isolated molecules, in the same way as the discharge from a mitrailleuse consists of isolated bullets.

Matter in the fourth state is the ultimate result of gaseous expansion. By great rarefaction the free path of the molecules is made so long that the hits in a given time may be disregarded in comparison to the misses, in which case the average molecule is allowed to obey its own motions or laws without interference; and if the mean free path is comparable to the dimensions of the containing vessel, the properties which constitute gaseity are reduced to a minimum, and the matter then becomes exalted to an ultra-gaseous state.

But the same condition of things will be produced if by any means we can take a portion of gas, and by some extraneous force infuse order into the apparently disorderly jostling of the molecules in every direction, by coercing them into a methodical rectilinear movement. This I have shown to be the case in the phenomena which cause the movements of the radiometer, and I have rendered such motion visible in my later researches on the negative discharge in vacuum tubes. In one case the heated lampblack and in the other the electrically excited negative pole supplies the *force majeure* which entirely or partially changes into a rectilinear motion the irregular vibration in all directions; and according to the extent to which this onward movement has replaced the irregular motions which constitute the essence of the gaseous condition, to that extent do I consider that the molecules have assumed the condition of radiant matter.

Between the third and fourth states there is no sharp line of demarkation any more than there is between the solid and liquid states, or the liquid and gaseous states; they each merge insensibly one into the other. In the fourth state, properties of matter which exist even in the third state are shown *directly*, whereas in the state of gas they are only shown *indirectly*, by viscosity and so forth.

The ordinary laws of gases are a simplification of the effects arising from the properties of matter in the fourth state; such a simplification is only permissible when the mean length of path is small compared with the dimensions of the vessel. For simplicity's sake we make abstraction of the individual molecules, and feign to our imagination *continuous* matter of which the fundamental properties—such as pressure varying as the density, and so forth—are ascertained by experiment. A gas is nothing more than an assemblage of molecules contemplated from a simplified point of view. When we deal with phenomena in which we are obliged to contemplate the molecules indvidually, we must not speak of the assemblage as *gas*.

These considerations lead to another and curious speculation. The molecule—intangible, invisible, and hard to be conceived—is the only true *matter*, and that which we call matter is nothing more than the effect upon our senses of the movements of molecules, or, as John Stuart Mill expresses it, "a permanent possibility of sensation." The space covered by the motion of molecules has no more right to be called matter than the air traversed by a rifle bullet can be called lead. From this point of view, then, matter is but a mode of motion; at the absolute zero of temperature the inter-molecular movement would stop, and although *something* retaining the properties of inertia and weight would remain, *matter*, as we know it, would cease to exist. —*Journal of Chemistry.*

## CELLULOID.

Celluloid is made by dissolving pyroxyline (or gun cotton) in camphor, instead of ether or alcohol. To prepare it for treatment with the camphor it is first ground in water. After the water has drained off, it is placed under pressure in a perforated vessel, and almost converted into a solid body, which, however, still contains enough moisture to prevent spontaneous ignition in the subsequent operations. This mass is now intimately mixed with camphor by grinding them together in water. One part of camphor, by weight, is employed to two parts of pyroxyline, but other proportions can be employed with good results. The desired pigments and other substances are added along with the camphor. After they have all been very thoroughly mixed, the mass is subjected to a very heavy pressure, which removes all the moisture and also brings the camphor into more close contact with the pyroxyline to aid it in dissolving the latter. The dried and pressed mass is now put into a vessel of the form in which it is desired to have the celluloid. In the top of this vessel is a piston or plunger, so that it can be subjected to the action of a hydraulic press. While under pressure it is heated by steam or otherwise to from 140° up to 265° F., according to the quantity of the mixture. It is kept at this temperature and under this pressure until the camphor has dissolved all the pyroxyline. The temperature increases the solvent power, while the pressure keeps the ingredients in intimate contact. The result is a solid mass perfectly homogeneous throughout.

Artificial ivory is prepared from 100 parts of ivory dust, 100 of pyroxyline and 50 of camphor. The pyroxyline is ground wet, then pressed until only enough water remains in it to prevent ignition. It is then mixed with the ivory dust and camphor, and pressed between absorbing cushions until all the moisture is extracted. Then 50 parts of nitrite of ethyl are added. The mixture is then left for several hours in a closed vessel until the nitrite is equally distributed throughout the mass. It is next subjected to heavy pressure in heated cylinders, as before described, and rolled between hot rollers. The product thus obtained has the appearance of natural ivory, is free from streaks and spots, is not attacked by moisture, and while hot can be pressed into any shape.

Celluloid as it leaves the press is about as dense as sole leather, but hardens in the air, owing to a slight evaporation of camphor. In the finished product there is still a good deal of camphor, and herein is found the essential advantage in the use of camphor over ether, alcohol, and other liquid or volatile solvents. All such solvents are completely removed from the mass, while enough camphor remains in it perpetually to serve as solvent over and over again, and to give it the property of being readily changed into any other shape at a high temperature without the addition of any other solvent.

By another process a dilute solution of camphor is employed, 1 part camphor to 8 of alcohol, which will not dissolve pyroxyline at common temperatures, but does so when heated. The pyroxyline is ground, mixed with pigment or dye, the water all removed, and 1 part of solvent added to 2 parts of pyroxyline, well stirred and put in a closed vessel until the solvent has saturated all parts of it. It is then heated under pressure as before described. The Compagnie Franco-Americaine, in Stains, near Paris, has been making celluloid for over three years, and has a branch at Mannheim, in Baden. The rubber comb company in Hanover also took up its manufacture, but abandoned it again, owing, it is said, to the danger from fire. Renleaux is of the opinion that some experimenter should contrive a method for dispensing with the camphor, and also rendering the pyroxyline less combustible; two difficult problems which Professor Wagner believes are not likely to be accomplished.

Unlike hard rubber, celluloid does not become electrical when rubbed. The odor of camphor can only be noticed when the substance is warmed, or on being rubbed. The numerous uses to which it is applied are too well known to need repetition here.—*Jahresbericht.*

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POSTAGE STAMP MUCILAGE.—Gum dextrin, 2 parts; water, 5 parts; acetic acid, 1 part; dissolve by aid of heat and add 1 part of spirits of wine.

## BAKING POWDERS.

LABORATORY OF THE HEALTH DEPARTMENT,
CHICAGO, August 3, 1880.

OSCAR C. DEWOLF, A. M., M. D.,
*Commissioner of Health.*

DEAR SIR: I have made a very careful and elaborate chemical examination of twenty-seven samples of baking powders received from you through the hands of Mr. Merki, your clerk, and have the honor to report as follows:

Many manufacturers have expended large sums of money and a great deal of time, attention, etc., to make up what they term a "good formula." It would not be fair to them, nor do I think it the place of this department to publish a complete analysis of each and every baking powder. What is necessary is simply to point out, are there any, and if so, what materials contained therein deleterious to the health of the community?

I here place a table of figures and shall explain them below:

| No. | Name. | Soluble. Ash. | Insoluble. Ash. | Total. Ash. | |
|---|---|---|---|---|---|
| 1 | —Silver | 22.00 | 0.02 | 22.02 | Ca. |
| 2 | —Perfection | 39.00 | 0.06 | 39.06 | 1st. |
| 3 | —American | 24.06 | 0.10 | 24.16 | Ca. |
| 4 | —Chartres | 18.52 | 0.02 | 18.54 | Al. |
| 5 | —Standard, Thompson & Taylor | 29.44 | 0.30 | 29.74 | 1st. |
| 6 | —Gillett's Yeast | 30.68 | 0.12 | 30.80 | Ca. |
| 7 | —Gillett's Cream | 31.74 | 0.08 | 31.82 | 1st. |
| 8 | —Dr. Price's Cream | 36.18 | 0.12 | 36.30 | 1st. |
| 9 | —Loyal | 18.56 | 1.04 | 19.60 | 1st. |
| 10 | —Anchor | 30.78 | 1.28 | 32.06 | Al. |
| 11 | —Standard, St. Bernard Mills | 31.52 | 0.48 | 32.00 | Ca. |
| 12 | —Sterling | 29.60 | 0.20 | 29.80 | 1st. |
| 13 | —Sherman's Pure | 33.84 | 0.08 | 33.92 | 1st. |
| 14 | —Empress | 22.70 | 0.60 | 23.30 | Al. |
| 15 | —Union Mills | 40.54 | 0.16 | 40.70 | 1st. |
| 16 | —Cottage | 35.86 | 0.08 | 35.94 | 1st. |
| 17 | —Royal | 36.10 | 0.12 | 36.22 | 1st. |
| 18 | —Reliable | 27.00 | 0.60 | 27.60 | Al. |
| 19 | —Chapman's | 18.92 | 0.24 | 19.16 | Al. |
| 20 | —Giant | 20.06 | 0.34 | 20.40 | Al. |
| 21 | —Manufactured in bulk, by Union Mills | 22.62 | 0.66 | 23.28 | Al. |
| 22 | —Meeches' | 22.08 | 0.28 | 22.36 | Ca. |
| 23 | —Success | 26.28 | 0.12 | 26.40 | Al. |
| 24 | —Golden Harp | 19.20 | 1.70 | 20.90 | 1st. |
| 25 | —Star Chemical Works | 35,02 | 2.32 | 37.34 | 1st. |
| 26 | —Peerless | 19.96 | 2.40 | 22.36 | 1st. |
| 27 | —Manf'd in bulk, by Star Chemical Works | 26.92 | 0.24 | 27.16 | Al. |

A known and weighed quantity of baking powder was incinerated in a silver crucible until only a gray residue was left; this is the total ash. It was carefully removed to a glass vessel and acted upon by hydrochloric acid and distilled water at the boiling point; what dissolved in that menstruum has been called soluble ash; that which did not, insoluble ash. From the above table it will be noticed that the insoluble ash is comparatively small, excepting in Nos. 9, 10, 24, 25 and 26. It may fairly be assumed that that amount of the baking powder will not be dissolved by the juices of the stomach, and may, therefore, be quoted as objectionable in these samples.

There are really four kinds of baking powder in the market.

1st. One composed of cream of tartar and bicarbonate of soda, or, what is essentially the same, of cream of tartar and bicarbonate of soda with some wheat or rice starch. The starch is added in order to keep the other ingredients apart and prevent their reacting upon one another until required to do so. The result of kneading such powders with flour and water is the production of carbonic acid gas and a nice light, porous bread. In baking in the oven a second portion of carbonic acid gas may be given off from the decomposition of the tartaric acid of the cream of tartar. Those marked (1st) on the above table belong to this class.

2d. One manufactured from meal and pressed yeast dried together. This would of necessity make an excellent baking powder were it not that it does not keep well for any length of time, especially in warm weather. None of these samples I have received from you have been made of such materials.

3d. Another class is made from the acid phosphate of calcium and bicarbonate of soda with flour or some kind of starch. It is well known that the central portion of the kernel of all cereals contains almost pure starch; that is to say that it has almost no nitrogenous matter, moisture nor ash with it. The external part, that immediately under the husk, is, however, rich in nitrogen and phosphates. The former (nitrogen) is the characteristic ingredient of the gluten which imparts the yellow to brown tint of flour. That color some consider objectionable. The phosphates are the bone-producing constituents of the flour, and this class of baking powders proposes to rectify the insalubrity of the pure white or highest grade flours. It is necessary to keep in mind that no one can live on a purely starch diet alone, but that in order to form all the various tissues of the body a variety of substances is required. This is very clearly demonstrated by the fact that unbolted wheat is very much more nutritious than the finest white flour. Under the next class I shall again refer to this. The baking powders of this, the third class, serve the purposes for which they are intended remarkably well. The acid calcic phosphate itself is soluble in water; any changes which may occur to it in the process of firing and kneading will not render it insoluble in the gastric juice; it will therefore in time fulfill all that is required of it.*

4th. The next class of baking powders is that in which the ingredients are alum, and bicarbonate of soda, or alum, bicarbonate of soda and starch or flour of some kind. The addition of starch in this case is for the same reason as in the others and cannot be objected to, unless where an excessive amount is used. With regard to alum baking powders there seems to be a great variety of opinion. Why there should be I cannot see. The addition of alum to flour in the presence of water will render the albuminous (flesh forming) constituents thereof insoluble. Does not that as well deteriorate the value of the flour as cause the stomach and intestines an amount of labor to turn over and get rid of useless material? Yet you will say, "Do not these albuminous substances cause the yellow tint of the flour and bread?" Certainly they do, as I have mentioned under third class, yet their usefulness vastly overbalances their objectionableness in color. I cannot do better than incorporate here the opinion of Dr. Hassall, of London, on the use of alum in bread, as I entirely concur in all he says on this subject: "The use of *alum* in bread is *particularly injurious*. It is true that it causes the bread to be whiter than it would be otherwise; indeed whiter than it was ever intended to be by nature; but it imparts to bread several other properties: thus it hardens the nutritious constituent of the bread, the gluten, and so, on the authority of the great chemist, Liebig, renders the bread more indigestible; it enables the baker to adulterate his bread with greater quantities of rice and potatoes than he could otherwise employ; and lastly, by the use of alum he is able to pass off an inferior, and even a damaged flour, for one of superior quality. Is it worth while to injure the properties of the bread by using alum for the sake of obtaining an unnaturally white loaf? The public, then, in judging of the quality of the bread by its color—by its whiteness—commits a most serious mistake; there is little or no connection between color and quality; in fact, very generally, the whitest breads are the most adulterated. The public, therefore, should lose no time in correcting its judgment on this point.

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* These marked Ca. on the table belong to the third class.

"The outer part of the grain of wheat has been proven by analysis to be much richer in nourishing principles, in gluten and in oily matter especially, than the central and more floury parts of the grain. Now, in preparing the finer descriptions of flour, the utmost pains are taken to separate this highly nutritious exterior portion of the grain, and thus, although the flour so obtained is very fine and white—very suitable for making a white loaf, that fallacious test of quality—it is yet not nearly so nutritious as whole meal flour, or even the less finely dressed qualities of wheat flour. The consumer, now better instructed, is in a position to judge of how much he sacrifices for the mere sake of an arbitrary and fallacious standard of quality, namely, whiteness. The difference in nourishing properties between whole meal flour and finely dressed flour amounts in many cases to fully one-third.

"Further, alum is very apt to disorder the stomach, and to occasion acidity and dyspepsia. The manner in which it does so has not been clearly ascertained. The powerful effects of alum as an astringent, when administered as a medicine, are well known; but when added to flour or bread, it becomes decomposed, sulphate of potash, an aperient salt, being formed.

"Liebig considers that part of the beneficial action of wheat flour on the system is due to the soluble phosphates which it contains in such large quantities, and he states that when alum is added to bread these are decomposed, the phosphoric acid of the phosphates uniting with the alumina of the alum, and that thus an insoluble phosphate of alumina is formed, and the beneficial action of the phosphates consequently lost to the system. So satisfied is Liebig that this is the case, that he has recommended the employment of small quantities of lime water for the purpose of whitening bread made from musty or damaged flour. Enough has now been adduced to show that it is a very dangerous thing to tamper with articles of daily food and of large consumption, like flour and bread, by the addition of chemical substances of any kind."—*Hassall, on Food and its Adulterations.*

I have carefully examined these samples for the presence of highly dangerous or poisonous metals and find them all to be perfectly free therefrom. The only objectionable metal to be found in them is alum, as under class 4. These have been distinguished in the above table by the letters Al.

Upon the whole, I believe in the use of baking powders, as manufacturers on the large scale can more readily secure pure ingredients and proper proportions than can private individuals simply making a small quantity for their own use, or using the various ingredients separately.

I should on no account, however, permit the use of baking powders in which alum is one of the chief constituents.

Some of the above powders contain alum in small quantities, but as a complete analysis has not been given it is not mentioned in the table. I have the honor to be, sir,

Yours very respectfully,

R. S. G. PATON,

*Chemist of Health Department.*

—*Chicago Med. Jour. and Exam.*

## PODOPHYLLIN.

BY I. GUARESCHI.

The author has examined the podophyllin of commerce obtained from *podophyllum peltatum*, and finds it consists of two substances, a resin soluble in ether and a glucoside which is not soluble in ether. This glucoside is decomposed by the action of emulsin, or when boiled with dilute sulphuric acid; in the latter case the solution on cooling deposits a white powder, whilst the sugar remains dissolved. The product of the decomposition of the glucoside is soluble in alcohol and also in boiling water, being deposited again as the solution cools; it has not been examined.

When commercial podophyllin is fused with potash and treated in the usual way, it yields a small quantity of a product which seems to contain hydroxysalicylic acid, parahydroxybenzoic acid and pyrocatechol.

The author considers that the glucoside in podophyllin resembles convolvulin and turpethin—*Jour. Chem.*

A GENUINE labor-saving machine—the obstetric forceps.

# "FLOWERS" OF VINEGAR AND WINE.*

BY J. B. SCHNÆTZLER.

*Flowers of Vinegar.*—Thanks to the now classic researches of Pasteur, we know that the conversion of alcohol into vinegar is the work of a minute fungus of the bacteria order, the *Mycoderma aceti* of Pasteur. This fungus takes the shape of an elliptical cell, somewhat constricted in the middle, and about 1.5 *millieme* of a millimeter in length. The cells occur singly or in chains. They form a thin pellicle on the surface of wine, and by extracting oxygen from the atmosphere and communicating it to the alcohol, convert the latter into vinegar. They propagate by division and surround themselves with gelatinous substance. They thus form a thick, soft, gelatinous head or scum, known in popular phraseology as "vinegar plant" or "flowers of vinegar," which gradually sinks in the liquor, at the same time losing its acidifying properties.

The "flowers of vinegar" referred to in this paper formed spontaneously on the surface of a sound two-years'-old white wine, in bottle, kept in a chest away from all sources of impurity, at a temperature of 10° C. (50° F.). Concave disks of mycoderma appeared in succession on the surface of the wine, and, in sinking, got heaped one upon another, so that they at last formed a cylinder about four inches in height and one inch in diameter. The same thing happened when the wine was poured into a test glass. As each disk sunk, a slight train of gelatinous substance could be traced, extending upward from it to the surface of the liquor, where the formation of another disk was beginning. Under the microscope, this gelatinous substance, minute flakes of which were floating about in the wine, was found to consist of bacteria, whose energy of movement appeared to be proportionate to the acidity of the liquor. The formation of the disks continued as before after the end of the test tube had been carefully closed with a cork. In this case, the bacteria must have been supplied by the wine, not the air. During the treading out of the grapes in autumn, large numbers of minute atmospheric organisms, mostly saccharomyces and mycoderma, find their way into the expressed juice, and, according to the conditions to which the latter is subsequently exposed, produce alcoholic fermentation, flowers of vinegar, flowers of wine, the condition known as *ropiness* in the wine, etc., depending on the particular organism which obtains the mastery in the struggle for existence.

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* Communicated to the Swiss Natural History Society.

Flowers of vinegar consist of bacteria (*Mycoderma aceti*, Pasteur) and a gelatinous substance, yellowish white or reddish in color, according to the color of the wine. This substance is generally regarded as produced by gelatinization of the cell membrane. It does not give the same reactions as cellulose; it is insoluble in cupric ammonia, and affords no blue or violet coloration with iodine or chloride of zinc. With tincture of iodine it turns yellow, as do the bacteria in it. Most fungi, however, present the same peculiarities, leading to the inference that they possess a modified form of cellulose (fungus cellulose). Boiled in water, the gelatinous matter of vinegar flowers does not dissolve, but thickens and takes a firmer consistency.

Under pressure, the moisture becomes squeezed out and the volume greatly reduced. Dried by exposure to heat, it dwindles to a corneous pellicle, which chars in flame, emitting an odor of burnt paper. The most striking feature is the tenacious coherence of the component films and the resistance they offer to separation.

Gelatinization of the cellulose occurs in many fungi. The chain-like cells of nostocs produce gelatinous masses in considerable volume, which in the common nostoc form olive-green laminæ exhibiting a high degree of cohesion. But the fact is more striking when we find the thin films of vinegar plant cohering so tenaciously.

It has lately been observed that certain living fungi, as *Penicillium glaucum*, have the property of fixing tannin in considerable quantity. To ascertain whether the fungoid organisms of vinegar plant possess the same property, I placed shreds of flowers of vinegar in a solution of sulphate of iron. Exposed to the air without the shreds, the solution took, as usual, a yellowish hue; but when the gelatinous substance of *Mycoderma aceti* was mixed with it, this gelatinous substance took a bluish green tint, although in vinegar alone it appeared a grayish yellow. Vinegar in which the bacteria were floating singly or in chains took the same bluish green tint on the addition of sulphate of iron, while vinegar from which the bulk of the floating germs had been precipitated took a yellow hue with the iron. If, as appears very probable, the coloration of the vinegar plant by ferric salts is due to the presence of a certain proportion of tannin, we must assume that the bacteria have absorbed this tannin from the wine converted by them into vinegar. The tannin fixing itself in the albuminous substance, that is the protoplasm of the bacteria of the vinegar, probably contributes to their cohesive properties and powers of resisting rupture.

Chlorophyll is absent in bacteria, but none the less these minute organisms have the property, with the aid of alcohol, acetic acid, certain salts, water, etc., of elaborating considerable quantities of proteid matter, as cellulose, fats, etc. Pasteur supposes electricity to exert the same influence here as light does on chlorophyll cells. The effects of electricity on plant cells are now no longer mere conjecture. The experiments of Velten ("Botanisch. Jahrb.," 1876) have proved that inductive currents of electricity produce in dead plasma of the plant cell movements identical with those recognized in the living cell under the names of rotation, circulation, etc. So long ago as 1849 I endeavored to show that the cause of ciliary motion, of the movements of spermatozoa, etc., was electricity. Now, the vibrating ciliæ of animals and plants are simply protoplasm (*Archives de Geneve*, 1849). Dallinger and Drysdale, according to a paper in the *Monthly Microscopical Journal*, 1875, determined, with the aid of a strong Powell objective, the existence of a vibratile filament at each extremity of *Bacteria terno*. Cohn had previously ascertained the existence of a vibratile filament at each extremity of *Spirillum volutans*.

*Flowers of Wine.*—Wine left in bottles or casks imperfectly filled, or in open vessels exposed to the air, becomes sooner or later covered with a thin finely convoluted pellicle of grayish white substance, popularly known as flowers of wine. Under the microscope, this is found to consist of minute fungoid organisms to which the name of *Mycoderma vini* has been given. This fungus differs from *Mycoderma aceti*. According to the researches of Max Rees, it belongs to the *Saccharomyces*, to which belongs also alcoholic ferment. Rees has given to *Mycoderma vini*, Desm., which is identical with *Mycoderma cerevisaæ*, Desm., the name of *Saccharomyces mycoderma*, Rees. The cells are oval, elliptical, two to three *milliemes* of a millimeter in breadth, and six to seven *milliemes* of a millimeter in length. They propagate by budding, forming chain-like ramifications. Under certain conditions, *ascospores* are found, as when wine containing flowers of wine is mixed with water. The cells then lengthen to 20 *milliemes* of a millimeter, and the protoplasm differentiates into 1—3 spores.

In the autumn of 1877 I put some pure grape juice in well-corked bottles, which were placed in a cellar where the temperature never exceeded 10° C. (50° F.) The fermentation was slow. A deposit formed in the bottom of the bottles; some matters continued floating. In March the clear portion of the liquor was decanted and had still a sweetish taste. The microscope showed that it contained numerous cells of *Saccharomyces ellipsoideus*, Rees, and bacteria, with and without motion. The cells of *Saccharomyces* budded and gave rise to a secondary fermentation. Exposed to the air in a test tube, on April 6, the wine speedily formed a thin convoluted scum of flowers of wine. These flowers consisted of *Saccharomyces mycoderma*, Rees. But every stage of transformation between this and the *Saccharomyces ellipsoideus*, Rees, floating in the liquor, was found among them. Exposed to air and light, the cells budded, gelatinized and formed flakes in the liquor. In a test tube filled with the same liquor and kept in darkness no increase of numbers ensued and no gelatinization could be detected; the proportion of *Saccharomyces ellipsoideus* floating in this liquor also appeared larger.

De Seynes has shown that when placed on a dry substratum affording little nourishment, *Saccharomyces mycoderma*, Rees, formed two to three spores in *asci*. These spores germinated in saccharine solutions, producing budding cells. I noticed the same thing in flowers of wine, which had formed on the surface of wine in a test tube. The scum thickened; the upper portion, no longer in direct contact with the liquor, but moistened still by capillary action, was less nourished than that beneath it; the cells, longer than the others and punctuated, often grouped themselves into ramifying chains, terminating in circular cells. Larger elongated cells were also observable, in which the protoplasm differentiated into two or three circular cells. But despite the presence of floating bacteria (*mycoderma*) in the wine exposed to air and light, there was no formation of flowers of vinegar. The *Saccharomyces* had prevailed over the bacteria in the struggle for existence.

I placed this same wine of 1877, which, after undergoing the secondary fermentation in bottle above mentioned, appeared to the naked eye perfectly clear and limpid, in a sand bath at a temperature of 80°

C. (176° F.). Afterward I exposed a sample of this with another of the same wine, which had not been thus treated. After a while the former showed no trace of flowers of wine, the latter was covered with them. A similar result was obtained by adding one per cent. of borax to the wine. From April 6 to June 6, wine thus treated was exposed to the air without a trace of flowers of wine appearing on it. The borax completely hindered the development of *Saccharomyces* in the liquor; but it was noticeable that the bacteria continued to live and move in the wine in spite of the borax, although apparently incapable of producing acetification. In strong red wines, borax in like manner prevented the formation of flowers of wine, but destroyed the color. A less dose prevented growth without affecting the color. Artificially colored wines lost their color sooner than others.

A word must now be said regarding the relationship between *Saccharomyces ellipsoideus*, Rees, and *Saccharomyces mycoderma* of the same. The species floating in the wine undoubtedly was the first. The convoluted pellicle, which formed on the surface of the wine when exposed to the air, had all the characteristics of flowers of wine. It thickened in the tube, not by mere agglomeration of cells, but by the peculiar membranous thickening observable in the flowers. The undermost layers of this head, which were in direct contact with the liquor, presented a greater resemblance to *Saccharomyces ellipsoideus*, while the upper and more aerobian layers consisted of organisms exactly resembling *Saccharomyces mycoderma* as figured by Rees. In view of these transitions, it may be asked whether the two species are not identical. This view is favored by M. Schulz's experiments ("Botan. Jahrb.," 1877). Schulz's experiments show that the fungus of flowers of wine when developed in saccharine solutions produces alcoholic fermentation therein.

*On the Condition known as "Ropiness" in Wine.*—For two successive years it was observed that a certain wine became "ropy" when run off into a small 100 liter cask, although in the larger cask from which it was taken it still remained sound and clear. Before putting the wine into the smaller cask, the latter had been twice carefully washed out and even "sulphured." Under the microscope the sick wine, which ran like oil, and had assumed an opaline tint, was found to contain innumerable minute bacteria, of spherical shape, and mostly arranged in chains. Pasteur, who noticed the same forms in a white

Nantes wine, gives their diameter as one *millieme* of a millimeter. Mine were smaller in their dimensions. They appear mostly in white wines; rarely in red. Like the bacteria of vinegar, they undergo gelatinization, and, according to Pasteur, sometimes form a thick scum or head, resembling that produced by flowers of vinegar. As the malady shows itself in the best cleansed casks and bottles, it would seem that the bacteria must be derived from the grapes. In casks which have held ropy wine, invisible germs lurk in the seams, and so transmit the malady. Only by prolonged antiseptic treatment can their influence be annulled. Whether the peculiar state of ropy wine arises from gelatinization of the bacterial cells, or from some peculiar kind of fermentation set up in the wine, it is beyond doubt that the presence and multiplication of the bacteria are the primary cause. In red wines this affection rarely shows itself; it is most common in white wines which have not been highly pressed or left long in contact with the husk. According to M. Francois, tannin precipitates the glutinous matter, and on this fact is based the application of tannin to the treatment of certain maladies in wine, a practice which enjoys a high repute in Champagne. This action of tannin may explain the difference between white and red wines in the above respect. As a rule, red wines contain a larger amount of tannin than white. The bacteria introduced with the grapes become tanned, and their development is checked accordingly. When the wine is deprived of its tannin, the surviving bacteria are free to develop themselves, and produce acetification or ropiness. In white wines containing little tannin this development takes place more readily. What tannin is present is fixed by some of the bacterial germs; the rest thrive and multiply, with the attendant results. The introduction of a certain proportion of tannin into the wine thus affords a means of combating the evil. The "ropy" wine above referred to contained much mycelium of *Mucor racemosum*, the protoplasm of which differentiates in globular cells, which occur singly or in gelatinous clusters, and have the property of producing alcoholic fermentation in saccharine fluids.—*Pharmaceutical Journal and Transactions.*

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THE American Pharmaceutical Association has decided to meet next year in Washington, D. C. Mr. Shinn, of Philadelphia, is the new President. The present incumbents were retained in the remaining offices.

# A NEW ANTI-NEURALGIC MENTHOL.

Archibald D. Macdonald, in a paper communicated to the Medico-Chirurgical Society of Edinburgh, by Dr. Taylor, January 8, 1880, and published in the Edinburgh *Medical Journal*, August, 1880, urges the claims of menthol as a new antiseptic and anti-neuralgic agent. Menthol is the stearoptine of peppermint oil, is a crystalline solid derived from the oil of peppermint by long keeping, or by being cooled to a low temperature. The American oil yields it at 0°C. Its chief source is the Chinese and Japanese oil. It is imported as Japanese camphor, in small white crystals, which have the peppermint odor, and resemble the sulphate of magnesia. In liquid or solid state it has a specific gravity less than that of water. It is rendered liquid and volatile at a temperature one or two degrees below that of the body. Some specimens, however, volatilize at a much lower temperature. It is very sparingly soluble in cold water. It liquefies slowly in water at 82°F., quickly at 120°F., but remains mostly as a separate layer. It dissolves freely in alcohol, in ether, in the fixed and volatile oils and in glycerin. The author publishes a series of experiments proving that this agent, which is the homologue of thymol, is an antiseptic of considerable power, but says that in Great Britain it will probably not come into general use as an antiseptic; but in India, China and Japan, or even in America, where the objections of small supply and high price cannot apply, its use is more to be maintained. One point is strongly urged in its favor, its volatilization at and a little below the temperature of the body, and its consequent adaptability for penetrating into every nook and cranny of wounds which are already putrefactive, slaying the bacteria, and rendering these wounds perfectly aseptic.

As an anti-neuralgic, the author believes the menthol to be of great value. One-tenth to one-sixth of a grain of menthol steadies the contractions of an excited heart, and slows them to a comfortable speed, and at the same time produces slight cerebral drowsiness. Half a grain of the crystals produced vomiting from gastric irritation. The author does not advocate its internal use unless well diluted. He deals with menthol as a local anæsthetic. The application of oil of turpentine in facial neuralgia by the Chinese was practiced at a very early date. It has also been locally applied for gout, the relief in both affections being almost instantaneous. *A priori*, the author concludes that the oil cures in virtue of the menthol which it contains. Reference is made to seven cases. In the first case, tri-facial neuralgia, the affected tract was painted with a mixture of menthol, one grain; oil of clove, ten minims; rectified spirit, fifty minims. This was done four times in successive attacks. Entire relief followed in from four to six minutes. First a feeling of coldness, and then some irritation from the application was experienced. This case may be regarded as typical; menthol is particularly advocated as a temporizing remedy until constitutional treatment may take effect. It may prove to be more effective as an application than aconite, veratria or atropia. Its use in toothache is followed by immediate relief. In neuralgia it has been noticed to render the paroxysms less frequent and less severe. In sciatica, the author painted the track of the sciatic, popliteal and tibial nerves to the ankle-joint with a ten per cent. solution, and this gave the patient immediate relief.—*Chicago Med. Review.*

## MONARDA FISTULOSA (WILD BERGAMOT).

BY C. M. WOODWARD, M. D., TECUMSEH, MICH.

Since the introduction of this new remedy for the cure of intermittent fever, last autumn, I have had the privilege of testing the very excellent fluid extract of the plant manufactured for me by Parke, Davis & Co., of Detroit, especially in regard to dosage, and find that the dose as laid down by this firm (before trial was made of their extract) was somewhat too small. Upon repeated trial I find that one fluid drachm in water, every three hours, beginning when the fever is highest, and continuing the remedy until the fever is interrupted, or until its sensible effects (prickly sensations all over the body, like that of prickly heat or of profuse sweating) are established, is the proper dose and mode of administration for an adult. Of course a proportionately less dose should be given to children—from fifteen to forty drops, according to age. In these doses the extract has not disappointed me when the case has been an uncomplicated intermittent, and I much prefer it to quinine or any other anti-intermittent. Since my article was penned for the December (1879) number of *New Preparations*, I have treated many cases of intermittent fever solely with this remedy, and have no cause to complain of any lack of success with it. My object in speaking of the dose was that the medicine might not fall into disrepute from a lack of success due to insufficiency of quantity. Thus far I have treated about thirty cases with this remedy, and can record but one case of failure, or one in which I deemed it advisable to use any other remedy in connection with the monarda. I do not claim for the monarda fistulosa that it is a never-failing specific for the cure of uncomplicated intermittent fever; but this much I do say, it has certainly proved for itself the possession of virtues and powers reasonably commanding the attention of the medical profession and a further trial.—*Therapeutic Gaz.*

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## PHARMACOCATAGRAPHOLOGIA.

BY L. WOLFF, M. D.

The art of writing prescriptions is as old as scientific medicine itself. When in the earlier days of medical science the combination of remedies in the treatment of disease was thought necessary, certain methods were devised by which their compounding should be outlined. We can trace this classification already in the ancient papyrus of the Egyptians as well as in the formulæ of the Greeks and Romans, as inscribed, often in verse and meter, on the temples of Æsculapius.

Naturally those formulæ appertained to remedies of a more permanent character than the prescriptions of to-day; remedies which were then thought to be arcana, universal remedies, both curative and preservative for most ills that flesh was heir to.

They were much prized, forming public treasure, without which little good could be accomplished by the physician. They were compounded under many mystic rites, accompanied by the singing of the faithful and the exhortations of the priests in the temples and on the public squares, on feast days especially set apart for this purpose, while from near and far the treasures were brought that entered into their composition.

We have to this day the formulæ of some of these ancient cure-alls, and had it not been for the great calamity, the destruction of the grand library of Alexandria, medicine would have no doubt inherited much more wisdom of the same order.

The ancient confections, the theriac of Venice, the mithridate electuary of Damocrates, which had hundreds of compononts, even snakes, frogs and pearls entering into its composition, were once thought to be wonderful remedies, and not more than seventy-five to one hundred years ago were consumed in large quantities at some of the principal seats of medical learning. Even to this day we have in Warburg's febrifuge tincture the above mentioned confection of Damocrates playing a most important part.

As the compounding of such voluminous formulæ and the preparation of their ingredients required special skill and time, not always at the physician's command, the preparing and dispensing of medicines were soon—in some countries by law, in others by common consent—separated into a distinct branch of medicine, termed pharmacy, and it was now more than ever necessary to establish certain rules and forms by which communications from the physician should be unmistakably understood by the pharmacist.

To this period also belongs the establishment of regular formularies containing the prescriptions for complex pharmaceutical combinations as well as a register of their ingredients; but the tendency of physicians was soon to disregard the conservative use of officinal preparations for the magistral formulæ both suited to their own inclination and the requirements of their patients. In the last century, when the symptomatologists had all the sway, it was not uncommon to find prescriptions of several bases, half dozen adjuvants, correctives and diluents, which, however, gradually disappeared until now it is both customary and prudent to confine ourselves to the most necessary and absolutely indicated bases.

On considering the manner and method which should be pursued by physicians when writing prescriptions, a task not always well or easily accomplished by the young practitioner, we find the skeleton of it divided into four distinct parts: the superscription, the inscription, the subscription, and the signature. The prefacing the whole by the name of the patient is often omitted, but not wisely so, as it indicates to the pharmacist if the medicine is destined for a child or otherwise, which may often prevent serious mistakes.

The abbreviation of the word "recipe" from the latin "recipio," (I take) by ℞ is one of the oldest customs of prescription writing, and not unfrequently lends its name to it. As it stands in the imperative mood "take," all the ingredients as a consequence will have to appear in the genitive case, while the weights are always expressed in the accusative. Thus:

For Mr. D. Thomas, Sr.

Superscription ℞

Inscription, { Ammonii chloridi, ʒiss........................base.
Extracti hyoscyami, gr vi........................adjuvant.
Pulveris extracti glycyrrhizae, ʒii..............corrective.
Aquæ, ℥vi........................................diluent.

Subscription. Misce fiat mistura.

Signature. Signa: Table spoonful every two hours.

Philadelphia, vi. 3. 80.
JOHN SMITH, M. D.,
241 North 12th St.

As apparent above, the inscription is again subdivided into a base, adjuvant, corrective, excipient or diluent, which should be placed seriatim as indicated above, but it is not to be inferred that all prescriptions must necessarily possess all these constituents, for often a base suffices, more so as frequently so-called adjuvants really impede its action, while the correctives, excipients and diluents only tend at times to make the dose more unpalatable and unnecessarily bulky.

It is to be noted here that it is the custom in this country, England and Germany to write prescriptions in Latin, certainly a relic of the good old time when books were written instead of printed, when they were so costly that in order to make them understood by savants of all nations they were clad in a dead language. To France alone is due the victory of breaking down this gross prejudice; and to-day, by doing so, the French profession has outdistanced their more conservative brethren. It is argued that patients should not know what they are taking, that it were better for them to be deluded; this I think should be simply beneath the dignity of the medical profession, for a science that has to make its way through fraud had better be swept out of existence; besides, I do not think that French physicians are less successful in their cures, or experience more difficulty in perfecting them, notwithstanding that the law there forces them to employ the language of their country in writing prescriptions. It has again been argued that Latin was more suitable on account of its concise and terse expressions, to which I would answer that no language is more precise and terse than English, and we certainly could save a great deal of embarrassment to the physician and avoid a great many mistakes, if instead of the execrable Latin used in our prescriptions we would adopt the English terms of the Pharmacopœia.

The weights and measures used are expressed by a system of signs well calculated to create confusion and give rise to omission and error, whereas if, as now proposed, we adopt the metric system, the old hieroglyphic signs of the ancients, which have to answer for many mistakes made by doctors and druggists, will be laid to rest, where they ought to have been these hundreds of years ago. The objection is raised that it is difficult for older practitioners to arrive at an understanding as to the values of the metric weights as compared with the units they have been accustomed to; if they only were not to calculate from the one into the other, but familiarize themselves with the principal values of the new system, they would with an ordinary knowledge of decimal fractions find it not quite so difficult, a fact well illustrated in Germany, where physicians, forced by law to write all prescriptions after January 1, 1872, in metric weight and measure, are to-day not a little puzzled if you talk to them of grains, scruples and drachms.

To write a good prescription it is first and foremost necessary to be certain what distinct remedy is indicated for your case, for the prescription should not be a mere scrawl to cover up your ignorance; you should have a thorough knowledge of the article to be dispensed, its physical character and chemical nature and its incompatibilities; you should have a knowledge of how to modify the base by an adjuvant, if necessary; of a corrective to overcome any undesirable symptoms or taste, an excipient to render it homogeneous and in a proper condition for its dispensation, or a diluent in order to be able to divide it in suitable doses.

The prescription should, if at all possible, be written with ink, as the fading of a lead pencil mark would not alone produce serious inconvenience and endanger the patient, but it might give an unconscientious druggist an opportunity to erase and correct his own error in compounding. It should be written with good black ink on good paper, for prescriptions often by many decades outlive their authors.

The handwriting should be always legible and distinct; the ingredients in the inscription written first, and then the doses, being calculated, affixed afterward.

A very good method practiced in England, and also in continental Europe, might here be recommended. It is to write a prescription for one dose and then direct the number you desire the patient to have, to be sent or delivered, expressed by: misce, fiat pilula i, da (or dentur) tales doses No. viii; or as the English physicians shorter say, m. fiat pilula i, mitte No. viii.

The signature should be written in English and the name signed in full, with address accompanying, if the prescription is apt to go to a strange druggist, where you are not known, as at any time a communication from the pharmacist to the physician may become of paramount importance.

Prescriptions should be short and clear, not incumbered by unnecessary directions to the druggist how to compound the medicine, for usually if he knows his business at all, and is intelligent, the pharmacist knows more about that than the doctor.

You should well know what to write before you start, as to correct or commence over again may rob you of the confidence of a new patient; and remember that often the skill of the practitioner is judged by the correct and neat appearance of a prescription, or justly condemned by the miserable scrawl of a poor lead pencil on the ragged edge of an old newspaper.—*Medical Bulletin.*

ACUTE POISONING BY IODIDE OF POTASSIUM.—M. Auger reports, in the *Practicien*, a case under his care in the Tenon hospital, in which the administration of two grams (thirty grains) of iodide of potassium brought on a condition characterized by fever, considerable tumefaction of the eyelids, lips and gums and profuse sweats. All these symptoms disappeared when the iodide was withheld.

This reminds us of a case which occurred in our own practice about three years ago, in which the patient's eyes were completely closed, and the entire face much swollen a few hours after a single dose of five grains of iodide of potassium had been taken. The swelling, together with other unpleasant symptoms, soon subsided.—*Medical and Surgical Reporter.*

## ADULTERATION OF DRUGS.

### SAMPLE INSTANCES SELECTED FROM PROF. DIEHL'S REPORT TO THE NATIONAL BOARD OF HEALTH.

*Aconite.* Quality of root in the market generally bad; often mouldy on arrival. Many parcels partially or entirely tasteless, being probably exhausted and re-dried.

*Belladonna.* Parcels have been met containing fifty per cent. of malvaceous roots.

*Colchicum.* Rarely met with of good quality during the year.

*Dandelion.* Chiccory substituted. So-called "cultivated dandelion" is nothing else than chiccory. So-called "American dandelion" is chiccory.

*Rhubarb.* Difficult to obtain good rhubarb during the past three years. Rhubarb rejected in the United States custom house returned to England; there powdered with a lot of superior rhubarb, reshipped to the United States and admitted. Powder adulterated in France with tumeric. The comparative ease with which rhubarb of good or fair quality is obtainable leads to the inference that inferior rhubarb is largely used for the powder.

*Sarsaparilla.* Quality, particularly of "Honduras," very poor; clay, pieces of foreign roots, large woody pieces of the caudex, etc., and plenty of dirt in the interior of the bundles, which on the outside appear bright and clean. On garbling some sarsaparilla the following admixtures, showing the carelessness of some dealers, were found: Nut-galls, matico stems; bay, belladonna, and digitalis leaves; paper, bark, straw, ipecac, may apple.

*Mustard.* Ground mustard, of English origin, in Colman's kegs, composed of corn starch, some potato starch, tumeric, capsicum. Of eight samples of ground mustard only one pure.

*Pepper.* A number of specimens of ground pepper, examined in France, showed the presence of dried and ground parenchyma of potatoes (left as residue in the manufacture of starch), lentil flour, chalk, linseed cake, sesame seeds, and grains of paradise. Whole pepper adulterated with acorns turned into small globes and suitably dyed. (Artificial pepper-corns, made of oil-cake, common clay, and Cayenne pepper, were already mentioned by Accum.) Light-weight pepper made equal to the heavy sorts by macerating in salt brine. Adulterants for ground pepper are, pepper leaves, sage, rape seed, potato, spices, capsicum, Guinea pepper, chiccory, rye, laurel leaves, stones from olives, bone dust, marine salt, and other mineral substances.

*Copaiba.* "Para" copaiba, containing six to eight per cent. fat oil. Factitious copaiba, manufactured in Indiana; containing castor oil; containing resin and linseed oil; factitious copaiba, composed of linseed oil, castor oil, turpentine, and sufficient copaiba to give odor.

*Opium.* Containing twenty per cent. of foreign matter, chiefly lead; powder adulterated to the extent of fifty per cent. "Smyrna" opium was found to be adulterated as follows, according to variety: *Macedonian* with clay; *Angora* with pieces of wax; *Amasia* with cherry gum; *Taushanly* with extract of licorice; *Balukhissar* with fused colophony; occasionally, also, entire cakes were factitious, and evidently composed in their interior of clay and cow's dung. Containing fourteen per cent. of starch. Opium (in Italy) observed which contained thirty per cent. of green leaves, supposed to be tobacco, finely chopped, together with small roundish balls of an undetermined substance. Containing ten per cent. of earthy matter, in England.

*Castor Oil,* containing ninety-five per cent. of whale oil; another specimen composed of lard oil, with a little croton oil.

*Musk.* A caddy of nineteen and a half ounces "true Tonquine musk" contained only six and a half ounces of musk, the remainder being earthy matter.

*Soap, Castile,* formerly of uniform quality; "now debased to an incongruous mixture, often of filthy fats and alkalies, with as much water as science and skill can put into solid form."

*Acid, hydrocyanic.* Eight samples of officinal and three of Scheele's acid, of the English market, all found to be deficient in hydrocyanic acid.

*Æther, spir. com.* Of eleven commercial specimens not one in any way approached the officinal requirements.

*Ammon., carbon,* a factitious article, made in Chicago, from water of ammonia, glue and bicarbonate of sodium, which greatly resembles ordinary carbonate of ammonium.

*Bismuth.* Antimony offered for metallic bismuth.

*Bismuth, subnitrate.* Adulterated with twenty-eight per cent. phosphate of calcium.

*Iodine.* Different specimens of crude article containing twenty-five per cent. of sawdust; containing 28.75 per cent. of iodide of cyanogen; containing five to twenty-two per cent. of water, 0.30 to 0.92 per cent. chlorine, and 0.40 to 1.11 per cent. ash.

*Iron and quinia citr.*, containing 4.3 to ten per cent. quinia (should contain sixteen per cent.) Of eight samples in the English market only two contained the officinal quantity of quinia, the others containing from five to twelve per cent. So called "English style" citrate of iron and quinia varied between three and six per cent. of quinia.

*Morphia, sulph.* Substituted completely by some mineral substance in a western city; in New York sulphate of quinia put up in morphia bottles and sold as morphia.

*Mercury, cor. chlor.* Adulterated with common salt.

*Potass., bitart.* A sample containing seventy-seven per cent. alum.

*Potass., bitart*, containing 63.33 per cent. farinaceous matter and sold as "pure" cream of tartar; another lot containing acid sulphate of sodium; another containing twenty-five per cent. of selenite, or sulphate of calcium, technically called the "great adulterater."

*Potass., bromide*, containing over five per cent. of chloride, as impurity. Of ten samples in France only one pure. Contained from ten to fifteen per cent. impurities, and one even thirty-five per cent., consisting of carbonate, iodide and sulphate.

*Potass., iodide*, containing nine per cent. and over of bromide of potassium; another containing ten per cent. of iodate of potassium.

*Quinia salts.* Mannite found in sulphate; in another case finely picked cotton was introduced into the bottles to increase bulk; salicine substituted for quinia sulphate in Philadelphia; muriate of cinchonia put up under Pelletier's brand, for sulphate of quinia; sulphate containing ten per cent. of anhydrous sulphate of sodium; sulphate of quinidia substituted for sulphate of quinia in England; containing one-third carbonate of sodium. A lot of "sulphate of quinia" exported to India contained, according to an analysis of Howard & Sons, London, not a trace of any of the cinchona alkaloids.

*Santonin.* Different specimens containing mica; adulterated with twenty-two per cent. boric acid; entirely substituted by picric acid.

*Silver, nitrate.* Lunar caustic, from Kentucky, sold as pure, containing but ten per cent. of the metal.

*Sulphur.* Flowers of sulphur containing fifty per cent. gypsum.

*Sulphur precipit,* containing sixty-six per cent. of sulphate of calcium.—*Louisville Med. News.*

## CHEKEN.

BY J. H. EGAN, M. D., PULASKI, TENN.

Cheken, or chekan, or chequen, is an evergreen shrub growing in the central provinces of Chili. It belongs either to the genus Eugenia or Myrtus. The natural order, myrtaceæ, furnishes many medicinal plants. It is best administered in the form of fluid extract, the dose of which is a teaspoonful every three hours, but it can be exhibited in much larger doses without any disagreeable effects.

In South America it is used for bronchitis and all affections of the respiratory organs. Its action is on mucous membranes, and wherever they are affected cheken is indicated. In gonorrhœa, leucorrhœa, chronic catarrh of the nose, cystitis, excellent results have been obtained from its remedial use.

Dr. Murell, of London, has given it an extended trial in cases of bronchitis, and says: "I have notes of fifteen cases of chronic bronchitis in which I have employed cheken, all the patients, with one exception, being men. The age of the woman was 51; the ages of the men ranged from 36 to 58. They were all bad cases, most of them of many years duration. Many of them had been attended at the hospital for some considerable time, and, almost without exception, they had in former years undergone much medical treatment with comparatively little benefit. Their occupations exposed them to cold and wet and draught, and, in some instances, they had the additional disadvantage of working in a dusty atmosphere. They complained chiefly of paroxysmal cough with thick, yellow expectoration and much shortness of breath on exertion. On physical examination of the chest, emphysema was detected, with or without a little rhonchus at the bases behind. They were, in fact, ordinary cases of winter cough. The liquid extract of cheken was ordered in two drachm doses in a little water every four hours, the dose being usually increased to half an ounce at the expiration of a week. The medicine was always taken without difficulty. In all cases the patients obtained some benefit, and, in most instances, the relief was very marked. There was in a few days a decided improvement in the cough, expectoration was from the first easier, and soon diminished in quantity, and finally the dyspnœa was less.

Cheken is a tonic astringent and diuretic; its sole unpleasant after effect is that it confines the bowels. In gonorrhœa and leucorrhœa it is to be taken internally and used topically by injection. In nasal catarrh it is to be snuffed up the nose or atomized. When applied topically it is well to dilute with water, one part of the fluid extract to six of water.

Dr. Henry Von Dessauer, of Valparaiso, was for many years physician to a large convent school, where many of the inmates suffered from consumption, hemoptysis being of constant occurrence. During the two years and a half that he gave cheken there was not a single death and no fresh cases of hemoptysis, and many of the patients who had been subject to attacks of bleeding gained flesh and strength in a very marked manner.—*Chicago Med. Review.*

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## DETECTION OF STRYCHNIA IN EXUMED BODIES.

How long after death strychnia may be detected in the body is a question which Prof. Ranke has set himself to discover by a series of experiments on dogs of various sizes and species, to which he administered one decigram of nitrate of strychnia. The London *Medical Record* summarizes his conclusions respecting the possibility of detecting strychnia in dead bodies. They are as follows: 1st. It was not possible to prove the existence of the poison by a chemical test in a dog which had been poisoned by the dose mentioned above (and which would prove fatal to a human being) after it had been buried 100, 130, 200 and 230 days. 2d. The presence of the poison could, however, be suspected from the peculiarly bitter taste of extracts of dogs which had been buried in the earth for 330 days. 3d. The physiological test for strychnia is much more delicate than the chemical test. Frogs, under the skin of whose backs a cold water solution of the extract had been injected, exhibited violent tetanic symptoms a short time afterward. The effects of the poison were especially strong if the extracts were taken from animals that had been buried only 100 days, but even after remaining in the earth for 330 days the extracts would produce the symptoms of strychnia poisoning in frogs. 4th. The physiological reaction is the same whether the bodies have remained in a moist or in a dry soil. 5th. Extracts which have been prepared from bodies that are far advanced in putrefaction produce a peculiar effect on frogs. They seem to become prostrate and stupefied, and the action of the heart is rendered much more feeble and slow. This is often apt to partially cover and retard the action of the strychnia. The effect is most striking when the extract is prepared from the bowels, less so when it is made from the stomach, and least when the extracts are prepared from the liver and spleen. 6th. The physiological action of strychnia is most distinctly seen when the extracts are prepared from the liver and spleen. This is not a new discovery, in so far that it has been long known that in cases of strychnia poisoning traces of the poison could be discovered in these organs *par excellence.*

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## SABBATIA CAMPESTRIS.

BY W. S. NEWTON, M. D., OSWEGO, KANSAS.

Miss Mary C. Mustfelt, a noted entomólogist and botanist, of St. Louis, in a late paper, says there are periods of abundance and non-abundance of annual plants, and says the sabbatias appear only once in seven years. There is so close a resemblance between the animal and vegetable kingdoms, or the flora and fauna, that I suspect the gifted lady is correct.

Among animals we have a similar occurrence in the migratory locusts, caleoptenus spretus and the harvest fly, or cicada septemdecim. They come to us periodically and disappear. These hexapods have the same causes for their appearance and disappearance which the plants have, and that is the seasons—wet seasons produce one and dry seasons the other. The sabbatia campestris which grows here is one of the best North American tonics and does best in wet seasons. It is a beautiful plant and no garden is more tastefully ornamented than the sections of our prairies in which it grows. For an antiperiodic, tonic and appetizer none of our indigenous herbs are better. In my practice I like the remedy more and more as I make its acquaintance. American physicians should give preference to indigenous remedies, and I pledge my word they will find a valuable one in the Kansas beauty, the sabbatia campestris.

This plant was recently known as S. stellaris.—*Therap. Gaz.*

## NOTES AND ABSTRACTS FROM VARIOUS SOURCES.

CONCENTRATED TINCTURE OF INSECT POWDER (*Tinctura pyrethri florum concentrata*), is highly recommended as an insecticide by Finzelberg, who prepares the tincture in the proportion of 1 part Persian insect powder to 10 parts absolute alcohol, and claims that, in order to prove efficient, it is necessary to scatter it by means of a perfume atomizer. When thus used in a closed room all flies soon drop dead, while scattering it over linen, etc., acts as a protection against fleas, etc.—*Pharm. Centralb.*

INSECT POWDER, COLORED YELLOW WITH CHROME YELLOW, was noticed by Dr. C. Grote, whose simple method of detecting the chrome yellow consists in igniting as much of the powder as can be put on the point of the knife with saltpetre, when a yellow fused mass is obtained, which being dissolved in water and filtered, yields in the filtrate and residue reactions respectively of chromic acid and lead. The fraudulent addition was probably not only made in order to impart a brighter yellow color to the pure insect powder, but in order to prevent the detection of other probably not yellow inert additions.—*Pharm. Ztg.*

HOW TO DETECT SMALL QUANTITIES OF GOLD IN SULPHURETS.—Reduce the whole of a sample of several ounces of the ore, by grinding, to an impalpable powder, that will pass readily through an 80-mesh sieve; mix about a drachm of the well-mixed powder with ten times its weight of pure lead and one or two fragments of borax glass the size of peas; place in a scorifier and expose in a closed muffle to bright red heat until the lead is all fused and the ore floats on top; then open the muffle and let a current of air pass slowly over the red-hot scorifier and its fused contents until the ore has been absorbed and the fused metal has disappeared beneath a covering of litharge; then remove, cool, break, remove and clean the lead button, and place it carefully in a heated cupel weighing somewhat more than the bead; when the lead has melted the muffle is opened and the air allowed to pass over the fluid mass until the lead has all been converted into litharge, and the litharge absorbed by the cupel, leaving the gold and silver behind; if the bead is white, silver is present; add about twice the weight of the bead of pure silver, fuse together with the blowpipe flame on a charcoal support, flatten while hot on an anvil, and heat for some time to boiling with pure nitric acid, which dissolves the silver, leaving the gold, if any were present in the ore, as a brownish black mass, which shows the characteristic luster when pressed with the knife blade, and when brought into contact with a drop of aqua regia, and then with a crystal of stannous chloride, develops a purplish red, violet, or brownish red coloration—purple of Cassius.—*Scientific American.*

GRAPE SUGAR, OR GLUCOSE, may be made as follows:

| | |
|---|---|
| Potato or corn starch | 100 pounds. |
| Water | 400 " |
| Sulphuric acid | 6 " |

Mix. Boil for thirty-five or forty hours, adding water to make up for evaporation; then saturate the acid with lime or chalk, decant or filter, and evaporate the clear liquor. The above proportions produce 105 pounds of glucose. When steam machinery is available the conversion is more rapidly performed under pressure, and the evaporation is conducted in vacuum pans. Corn starch, now used in this country almost exclusively, produces better-tasting glucose than the potato starch, more commonly employed in Europe; for this reason, among others, the importation of grape sugar has nearly ceased, and reasonable hopes are entertained of exporting the home-made article.—*Druggists Circular.*

ROSE TOOTH POWDER.—

| | |
|---|---|
| China clay | 16 ounces. |
| Sugar milk | 8 ounces. |
| Oil rose | 5 drops or q. s. |
| Carmine | q. s. |

The flavoring materials in the above formula as well as the coloring matters can be adjusted to suit individual tastes. The closest attention should be given to the fineness of the powders; each solid should, before mixing, be passed without pressure through a sieve of fine Swiss muslin, and after rubbing together with the essential oils in a mortar the powder should be again sifted and bottled at once.

Coloring matters are of course practically useless, and may in all cases be left out if desired. A very nice color, however, may be prepared by making, by precolation, a strong tincture of red saunders. using to a pound of the finely powdered saunders-wood enough alcohol to make a pint of tincture, which is mixed with two pounds of precipitated chalk, or, better, finely powdered kaolin, the mixture dried, powdered and sifted through Swiss muslin. The color is permanent and quite unique. Finely powdered kaolin, or China white, is a better material than precipitated chalk for the preparation of tooth powders, as it is entirely tasteless, and consequently requires less flavor. It is a basic silicate of alumina largely used in the manufacture of porcelain, from which come the terms China white and China clay.—*The Druggist.*

HOOF OINTMENT.—Very satisfactory results are said to have been obtained with the following ointment in the treatment of all diseases peculiar to hoofs, such as cracks, scratches, cuts, etc.:

℞ Benzoin, catechu, bone charcoal..............each 10 parts.
Reduce to a very fine powder and add:
Pure carbolic acid.............................. 8
Petroleum ointment.......................... 100
Yellow wax ..................................... 10
Mix, with a gentle heat.
—*Pharm. Centralh.*

POISONING BY IODOFORM.—Not much is at present known of the toxic effects of iodoform, and considerable interest therefore attaches to two cases which have been published by Oberlander. The maximum dose given was 0.8 gram (12½ grains) in a pill. The symptoms of poisoning occurred in one case (a woman twenty-six years of age) after forty-two grams of iodoform had been taken in eighty days; in the other case (a woman sixty-nine years of age) after five grams had been taken in the course of seven days. The symptoms produced were giddiness, vomiting and deep sleep, from which the patient could be roused with difficulty. This somnolence was interrupted by periods of excitement, each lasting several hours, and was followed by delirium, intense headache, sense of impending death, spasmodic contractions of the facial muscles, and in the case of the younger patient, diplopia. The functions of the other sensory organs were not disturbed, and the pupils presented a normal reaction. Deep inspirations alternated with apnœa of about a minute's duration. After five or six days the toxic symptoms gradually lessened and passed away.—*Lancet.*

## REVIEW OF CHICAGO DRUG MARKET.

**The volume of trade, large throughout the summer months, is steadily increasing. Prices are very steady. The cinchona alkaloids and their salts are without change, but a decline is anticipated, as the season of greatest demand is nearly over. Opium has been pushed up a little by the efforts of the syndicate. Chian turpentine, which is now rarely called for, is quoted all the way from $1.25 to $64 per pound.**

| | | |
|---|---|---|
| Acid, Nitric | lb. | 12 @ 14 |
| " Tartaric | " | 54 @ 56 |
| Aloes | " | 16 @ 50 |
| Amm., Carbonate | " | 22 @ 25 |
| " Muriate | " | 14 @ 16 |
| Bleaching Powder | " | 4 @ 5 |
| Blue Vitriol | " | 9 @ 11 |
| Borax | " | 11½ @ 13 |
| Camphor | " | 28 @ 30 |
| Cantharides | " | 1.25 @ 1.40 |
| Cassia | " | 24 @ 26 |
| Castile Soap | " | 8½ @ 17 |
| Chamomile Flowers | " | 30 @ 38 |
| Cinchonidia, oz. bots | oz. | 1.05 |
| Cloves | lb. | 45 @ 50 |
| Cream Tartar (pure) | " | 36 @ 38 |
| Cubebs | " | 25 @ 28 |
| Cuttle Fish Bone | " | 26 @ 28 |
| Ergot | " | 60 @ 70 |
| Ginger, Afr | " | 10 @ 15 |
| " Jam | " | 25 @ 30 |
| Glycerin | " | 23 @ 85 |
| Insect Po | " | 60 @ 70 |
| Iodine, Resub | " | 4.25 @ 4.50 |
| Ipecacuanha Po | " | 1.50 |
| MERCURIALS— | | |
| Blue Pill | " | 48 @ 50 |
| Calomel | " | 68 @ 70 |
| Corrosive Sub | " | 58 @ 60 |
| Mercurial Oint | " | 44 @ 50 |
| Red Precipitate | " | 78 @ 80 |
| Morphia Sul. P. & W. ⅛ oz. | | 4.85 @ 5.00 |
| Nutmegs | lb. | 1.10 |
| Oil, Anise | " | 2.00 @ 2.25 |

| | | |
|---|---|---|
| Arnica Flowers | lb. | 17 @ 20 |
| Assafœtida | " | 20 @ 25 |
| Balsam Copaiba | " | 62 @ 65 |
| " Tolu | " | 75 @ 80 |
| Bees-wax | " | 30 @ 33 |
| Oil Bergamot | " | 2.85 @ 3.00 |
| " Cassia | " | 1.25 @ 1.35 |
| " Castor | gll. | 88 @ 1.00 |
| " Lemon | lb. | 3.50 @ 3.75 |
| " Olive | gll. | 80 @ 3.50 |
| " Pennyroyal | lb. | 1.25 @ 1.30 |
| " Peppermint | " | 3.25 @ 4.00 |
| " Sperm (pure) | gll. | 1.35 @ 1.40 |
| " Wintergreen | lb. | 3.00 @ 3.25 |
| " Roses | oz. | 5.00 @ 8.00 |
| Opium, prime | lb. | 7.75 |
| Pepper, Cayenne | " | 35 @ 37 |
| Potass., Bromide | " | 36 @ 40 |
| " Chlorate | " | 22 @ 25 |
| " Iodide | " | 3.00 @ 3.10 |
| Quicksilver | " | 53 @ 55 |
| Quinine, P. & W., 1 oz. btls. | | 3.05 |
| Salicin, 1 oz. vials | oz. | 40 @ 45 |
| Santonin, 1 oz. vials | " | 70 @ 75 |
| Seed, Canary | lb. | 3¾ @ 4¼ |
| " Hemp | " | 3¾ @ 4¼ |
| Senna | " | 15 @ 25 |
| Seneka Root | " | 65 @ 70 |
| Shellac | " | 50 @ 55 |
| Soda, Bicarb | " | 4 @ 6 |
| " Sal | " | 1¾ @ 3 |
| Squills | " | 12 @ 14 |
| Sugar, Lead, white | " | 16 @ 18 |
| Tonqua Beans, Angostura | " | 2.50 @ 2.75 |

# THE PHARMACIST.

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## EDITORIAL.

### AMERICAN PHARMACEUTICAL ASSOCIATION.

Like the reports of conventions in general, the account of the proceedings of this Association, now before us in full, is largely made up of names and motions and ballots, of but little interest except to the parties whose names figure most conspicuously. We shall, therefore, give only a synopsis of the most important events of the meeting.

President Sloan, in his address, commenting on the gradual disappearance of wild medicinal plants in this country, recommended that the Association take in hand the matter of learning the habits and wants of these plants, and of suggesting means to prevent their extinction.

One hundred and forty-one new members were proposed and elected.

The Treasurer's report showed an income of $4,935.39 during the year, and a balance on hand of $1,461.61, against a balance of $980.98 at previous meeting.

James T. Shinn, of Philadelphia, was chosen President; Geo. H. Schaeffer, of Iowa, Wm., S. Thompson, of Washington, D. C., and Wm. Simpson, of N. C., Vice-Presidents. The remaining officers, as usual, were continued.

The centennial fund was completed, and now amounts to $1,079, the interest of which will be used to defray the expense of original investigation.

The Ebert prize was not awarded, there being no worthy competition for it.

The next meeting of the Association will be in Kansas City, Mo., beginning August 23, 1881. Our correspondent, supposing that the report of the committee on this subject would be adopted, so wrote us, and hence in our last issue we stated that the next meeting would be held in Washington, D. C.

The Constitution and By-Laws were so changed that hereafter the business of the Association will be managed by a council of seventeen members, nine of whom are to be elected for this special purpose, and eight officers to become members *ex-officio*. Of the nine to be elected, three hold their position for three years, three for two years and three for one year.

Dr. Squibb ineffectually tried to make the Association conform to the rules of an association of delegates, in which the votes should be by States, and not, as now, by the multitude who happened to be present at any meeting.

Mr. Caspari, in a paper, recommended the use of citrate of sodium in place of citrate of ammonium in the preparation of pyrophosphate of iron, and claimed that the resulting salt is as soluble and keeps better.

Mr. Coffin showed that, as a solvent for the active principles of lupulin, the aromatic spirits of ammonia is in no respect superior to alcohol, and in the matters of beauty and stability of preparation is inferior.

Mr. Candidus concluded his report on the increase in the volume of solvents by the solution of various salts. The amount of increase is astonishingly small in most cases, and yet the volume seems to be always slightly augmented. Ten grams of nitrate of ammonia dissolved in twenty grams (cubic centimeters) of water give a volume of only twenty and six-hundredths cubic centimeters of solution.

Mr. Lloyd communicated an open secret, viz.: that the best leptandrin of commerce is at best but powdered extract. He very properly suggested that it should be known as dried extract of leptandra.

Mr. Lloyd would have done well to have continued his disclosures so as to have shown that most of the so-called "resinoids" "alkaloids," etc., are simply powdered extracts.

Mr. Diehl finished his report on fluid extracts, in which he proposed that the weight of the finished extract should equal that of the drug. Probably so fine a philosopher in this line as Mr. Diehl has not failed to see an insuperable objection to this plan of procedure on account of the difference in specific gravity of solvents, as well as in the composition of the crude drugs. When strong alcohol is the most suitable solvent, and especially when the whole percentage of active principles and matter, soluble in this menstruum, in the plant are also small, the volume of the finished extract must be correspondingly enlarged, thus straining the rule of exact representation towards a weaker preparation. On the other hand, when the solvent should contain much water, and, perhaps, also glycerin, and when, as is the case in many articles, a very large percentage of the drug is soluble in such a menstruum, the finished extract, having a high specific gravity, would necessarily be restricted in volume, thus straining the rule of representation in the opposite direction.

The exhibition was very large and attractive. Our correspondents particularly mention the displays of Parke, Davis & Co., McKesson & Robbins, Keasbey & Mattison, Lehn & Fink, Wyeth & Bro., Warner & Co., Jas. G. Steele, Randolph & English and Whitall Tatum, Theo. Ricksecker, and Powers & Weightman.

## PHOTOGRAPHS OF MEDICINAL PLANTS.

We have received of Mr. C. L. Lochman, of Bethlehem, Pa., a dozen more of his excellent photographs of indigenous medicinal plants. The following are the subjects: Veratrum viride, Vaccinium crassifolium, Acorus calamus, Iris versicolor, Valeriana off., Caulophyllum thalictroides, Epigea repens, Polygala senega, Menispermum canadense, Trillium erectum, Viburnum prunifolium, and Arisæma triphyllum. As the editor understands the art and science of photography, and as an amateur practices it considerably in the illustration of scientific subjects, he feels competent to offer his opinion on the merits of photographic work. Thus far he has never seen the productions of Mr. Lochman equaled. Owing to the many colors represented in plants, they are difficult to photograph, but Mr. Lochman has succeeded in arranging and posing his subjects so perfectly that every characteristic, except the natural tints, is shown in great perfection. We do not see how any country druggist or physician can afford to neglect the opportunity offered by Mr. Lochman to become familiar with all the indigenous medicinal plants of this country. Such a knowledge can be turned to very profitable account in the way of collecting yearly such articles for stock as grow conveniently, thus insuring the best of genuine articles at perhaps almost no expense. In any locality where standard articles grow in unusual abundance the druggist may cause large lots to be gathered, which can always be sold for cash or exchanged for regular stock.

RANDOLPH & ENGLISH, (not Hancock and English,) of Richmond, Va., are the "boss" druggists' box makers of this country.

ALL the medical colleges report unusually large classes. Rush claims to have had 437 matriculants on the first day of its session. It appears as if this city was destined soon to attain to the same supremacy in educational matters that she has gained in commerce.

THIS number contains several new advertisements, which are well worth perusal. By the way, do you always read the advertisements? If not, you miss much of the real value and entertainment of the journal. Those who thus solicit your trade usually have real advantages to offer you.

THE CHICAGO COLLEGE OF PHARMACY opened its doors October 4 to the largest class that it has yet had. Prof. Hambright delivered the opening lecture, after which the Chairman of the Lecture Committee and each of the Professors made such announcements in regard to tickets, text-books, etc., as seemed to be necessary to enable the students to at once proceed to effective study.

THE GRAND INTER-STATE EXPOSITION OF CHICAGO, which closed recently, very much reminds one of a tolerably good county fair, with its array of reapers, sewing machines, plows, stoves, canned fruit, etc., but lacking the fine stock. Science, never a prominent feature in the Exposition, was more poorly represented this year than previously. The managers throw away a grand opportunity in this respect. Perhaps the indifference of the people this year may stimulate the management to better efforts next.

ONLY those who use Trœmner's balances have a right to affirm positively "*mene, mene tekel upharsin.*"

WE learn that a movement is on foot to organize a State Pharmaceutical Association, but have not learned any details as to the progress made.

RECOVERED.—Mr. Fleisher, who met with a street railroad accident last summer, from which it was supposed he would never fully recover, is around again, apparently as well as ever.

MR. MCDOUGAL, a student in attendance at the last term of the College of Pharmacy, had his leg broken by the overturning of a buggy during the summer, but has so far recovered as to resume his seat in the College during the present term.

SABIN'S MUCILAGE CUP.—Mr. Charles Sabin, of Rockford, Ill., has invented a very perfect receptacle for mucilage, and has thus supplied a real want in every drug store. Those who will take the pains to look at the box, which we believe can be had of all the wholesale dealers, will be quite sure to want it.

DR. CARUS WARBURG, the author of "Warburg's Tincture," is said to be old and destitute, on which account many of our medical exchanges are exceedingly lachrymose. For our part, while we sympathize with suffering, we cannot forget that this man inflicted upon the medical profession one of the most villainous, shot-gun prescriptions of our era. Many good folks believe that retribution is not always exclusively reserved for the nether world.

POISONING.—In the *Brit. Med. Jour.* Dr. Jardine reports the case of a girl taking half a teaspoonful of santonin; in an hour she became insensible, foamed at the mouth, with livid face and stertorous breathing; fortunately vomiting occurred and she recovered. Dr. Watson also gives the case of the poisonous effect of swallowing half a castor-oil seed, the patient suffering from a burning sensation along the whole alimentary canal, with vomiting and diarrhœa.

# SELECTIONS.

## OPIUM HABIT.

### STATISTICS SHOWING ITS PREVALENCE IN THIS CITY—A PECULIARLY FEMININE VICE—HOW IT IS GENERALLY ACQUIRED.

Dr. Charles Warrington Earle, Professor of Diseases of Children, Woman's Medical College, and physician at the Washingtonian Home, delivered before the West Chicago Medical Society an interesting and valuable lecture on "The Opium Habit in Chicago," the more popular portion of which is a follows:

It is nine years since I was appointed physician to the Washingtonian Home. During the first four years of that time I have no remembrance of having treated systematically any cases of the opium habit, but during the last five years my attention has been directed to this subject in more than a score of cases, and during the past year hardly a month has passed without a patient being placed under my care. I found that their symptoms in nearly every case were similar, and several months ago I commenced to study them more closely, with the view of making some definite deductions at the appropriate time. It is proper for me to state that the Washingtonian Home was not intended by its founders as a place for the treatment of opium inebriety, yet during these latter years certain cases have presented themselves at our doors which seemed to demand our attention, and our institution being the only one in the West, we could hardly refuse them admission.

It is exceedingly difficult practice to care for these individuals—they require more watching and more nurses than the alcoholic class. Notwithstanding this, we have taken these persons from time to time, and to the majority have done great good.

### THE OPIUM TRAFFIC.

In an article entitled "The Impending Danger," Dr. Mattison, of Brooklyn, states that he is assured by both dealers in the crude drug and manufacturers of the alkaloids that the importation of opium is increasing rapidly every year, and that the supply may become insufficient for the demand. The question naturally suggesting itself is: What becomes of the vast amount yearly brought to our shores? With the intention of finding to some extent the amount used non-medically, I have interviewed fifty druggists in various sections of the city. The questions have been in regard to: First, the number of regular opium customers; second, sex; third, nativity; fourth, age; fifth, social relations; sixth, married or single; seventh, occupation; eighth, cause assigned; ninth, kind of narcotic; tenth, quantity. The pharmaceutists, without exception, have seemed willing to aid me in my investigation, and the great majority deprecate, in measured terms, the opium trade in all its aspects. Four of those interviewed do not sell the drug unless prescribed, and a large number express themselves as dissatisfied with this part of their business, as liable to cause trouble; and from the fact that, almost without exception, this class of customers sooner or later become irresponsible and unreliable. In order to discourage the trade, some druggists are driving from their doors those who would purchase the different opiates by asking a high price for the drug. For instance, one gentleman has ceased to sell to any by asking $1.25 per drachm for morphia when it could be purchased for 65 to 75 cents elsewhere.

### RESULTS OF INVESTIGATION.

Inquiries were made at fifty drug stores. The three divisions of the city were visited, and localities inhabited by the different classes and nationalities were thoroughly canvassed. I was greatly surprised to find that druggists on the West Side were patronized to a greater extent (excepting a few on Clark street) than in any other part of the city. Foreign druggists (German and Scandinavian) seem to exhibit more conscientious scruples in regard to the trade than our own nationality. I learned from some of these gentlemen that in Denmark, and, if I mistake not, in Norway and Sweden, the trade is absolutely forbidden. Fifty druggists have 235 customers, or an average of nearly five to each store.

### SEX.

Among the 235 habitual opium-eaters, 169 were found to be females—a proportion of about 3 to 1. Of the 169 females, about one-third belong to that class known as prostitutes. Deducting these, we still have among those taking the different kinds of opiates two females to one male. In one family I found the mother, at the age of 65, taking one drachm of gum opium each day, and her daughter, at the age of 30, consuming two drachms of the tincture. One lady, aged 50, has taken it since she was 13 years of age. Suffering from some painful sickness during her youth, she was given by a physician a box of powders, on which was written "Morphia." She had the prescription repeated, and gradually found herself in the power of the seductive drug, from which, in all probability, she will never be freed.

I am acquainted with an aged couple living on Harrison street, aged respectively 70 and 75, who take a drachm of morphia each every week, when by any means whatever they can procure it. The husband has suffered from fracture, and the wife with neuralgia and rheumatism.

### NATIONALITY.

| | |
|---|---|
| Entire number of cases | 235 |
| Americans | 160 |
| German | 7 |
| Irish | 17 |
| Scotch | 10 |
| Colored | 12 |
| English | 6 |
| Scandinavian | 5 |
| Unknown | 18 |

It will be noticed that it is among our own people that we find the largest number yielding easily and in considerable numbers to the influence of this drug. The German and the Irish find relief from their troubles in the anæsthetic effect of beer and whisky, while the American takes a not less effective agent, but one whose effects for the time do not incapacitate the victim for business. And, in addition, I suppose it is true that it is more particularly among Americans, and the foreign class who come to be Americanized, that we find those neurasthenic people who bear pain badly and demand relief from some source. I have always found it difficult to dissuade a certain class of ladies from taking more anodynes than I thought proper. They constantly demand to be relieved from pain.

AGE (APPROXIMATE).

| | |
|---|---|
| *Males*— | |
| From 20 to 30 years | 5 |
| From 30 to 40 years | 19 |
| From 40 to 50 years | 11 |
| From 50 to 60 years | 7 |
| From 60 to 70 years | 1 |
| From 70 to 80 years | 1 |
| Unknown age | 22 |
| Total | 66 |
| *Females*— | |
| From 10 to 20 years | 2 |
| From 20 to 30 years | 18 |
| From 30 to 40 years | 39 |
| From 40 to 50 years | 22 |
| From 50 to 60 years | 14 |
| From 60 to 70 years | 4 |
| One-third entire number prostitutes, probably from 15 to 50 | 56 |
| Unknown age | 14 |
| Total | 169 |

It is, as will be seen, a vice of middle life, the larger number by far being from 30 to 40 years of age. One woman, an octoroon, commenced using it when 13 years of age. Away from her friends, she became downhearted and homesick, when an elderly lady, herself a morphia-eater, offered the young girl a powder, with the remark that it would cheer her up, and cause her to forget her sorrows. This was repeated for several days, the morphia habit was established, which has clung to the woman to this day. She now takes thirteen grains of morphia in the morning and five grains in the evening, and has taken as high as sixty grains per day.

It is reported to me, although I cannot be held responsible for the statement, that a young woman, now 25 years of age, and following the occupation of prostitute, commenced to take morphia when only five years of age. While I cannot vouch for the truth of the above remark, I know from my own observation that many young children, even infants, become accustomed to and feel the stimulating effects of opiates. Not only this, but they experience the terrible depression, and have the symptoms which I always notice in an adult after the withdrawal. An infant at two weeks of age was given its first dose of soothing syrup. It took two bottles during the first month, six bottles during the second and third months, and four bottles each month during the remaining four months of its life. It died during its seventh month. During the last three months it was constantly nervous, it gradually became pale and slightly yellow, yet increased in flesh. Upon the rapid withdrawal of its morphia, which I assume to be the anodyne ingredient in its soothing syrup, it was taken with terrible diarrhœa, incessant vomiting, apparent unbearable muscular pains, prostration, and death. While a bronchitis with which the little sufferer was attacked may have had something to do with its death, it has always seemed to me that many of its symptoms were due to the withdrawal of its customary soothing syrup. Of course, the entire history of this case was not given to me until after the death of the child.

## SOCIETY RELATIONS.

It is very rare to find a poor Bohemian or Swede habitually taking any kind of an opiate. It is equally rare to find a wealthy person in the full enjoyment of his or her property taking it. A large number of thóse who have formerly occupied high social standing and enjoyed wealth, but from different causes have become reduced in circumstances and position, are taking the drug. It is, however, among the middle class that we find the very great majority who are to-day our opium-eaters. There are a few exceptions, but in general I believe I have made the correct statement.

## MARRIED OR SINGLE.

The great majority of morphia-takers either are or have been married. Many of both sexes who have occupied this relation are now separated, the unreliability, and loss of respect, and untruthfulness which the use of the drug usually produces, being the cause of this unhappy condition between husband and wife.

### OCCUPATION.

From my notes, made while making these investigations, I take the occupation of 100 occurring at the head of the list:

MALES.—Iron merchant, 1; newsdealer, 1; business men, 5; physicians, 2; laborers, 3; turner, 1; druggist, 1; book-keepers, 2; capitalists, 2; clerk, 1; contractor, 1; insurance agent, 1; book agent, 1; railroad man, 1; acting, 1; unknown, 9.

FEMALES.—Housewives, 45; society ladies, 3; widow, 1; sewing woman, 1; servant, 1; washwomen, 2; prostitutes, 5; unknown, 9.

It will be observed that it is in those occupying middle stations that we find the largest number taking the drug, although, among thirty-three men, two are classed as capitalists. I find also, with much regret, two of our profession, which leads me to remark that a few of the heaviest consumers of morphia are physicians and druggists. Their devotion to the seductive influences of the drug has, however, destroyed their business, and they wander around, in some instances at least, leading an aimless and abandoned life. A large proportion of the females are classed in "housewives," but they must necessarily include many widows or those abandoned by their former husbands. The small number of prostitutes numbered in the list arises from the fact that the locations where these observations were made were among the best in the city, only a few of this class residing there.

### CAUSE ASSIGNED.

In many cases it is difficult to ascertain the reason for taking the drug. The customer buys the preparation he desires and immediately takes his departure; and it is usually a delicate question to ask, "What do you take it for?" Dr. Joseph Parish says that men take it, not for social enjoyment, but for a "physical necessity." With such an opinion I have no sympathy. When it is a physical necessity for men to steal and lie and murder, and partake of alcohol to such an extent as to incapacitate themselves for work and bring ruin on their families, then I will admit the same in regard to opium-eating. Quite a number, however, freely confess the reason for taking the drug. Eight say that it is for its stimulating and happy effect; four formerly were addicted to drink, and seek quietude by taking opium; five are unhappily married; thirty-eight have had rheumatism, and are now suffering from it to some extent, and an equal number assign neuralgia as the cause of the pains for which some form of opiate is taken. Those diseases known by the incomprehensible name of "female complaints" are frequently given as the cause for taking an opiate. Previous sickness, and wounds received during the war, painful stumps after amputation, injuries to the nerves, etc., etc., loss of property and position in society, are given by a few. But the great majority confess that it was first given during some disease in the course of which pain was a prominent symptom. An opiate was prescribed by the physician, and ever afterward, when suffering pain, the little powder or laudanum or gum opium has become their solace. However much we may desire to avoid this grave responsibility, the truth must be confessed that the greater number of men and women who are now completely enslaved to the different preparations of opium received their first dose from members of our profession.

### KIND OF NARCOTIC.

Ladies use morphia, in the majority of cases, men of the lower classes gum opium, and a few of both sexes who have a desire for alcoholic stimulants, in addition to the opiate, use the tincture, and occasionally one is found taking large doses of paregoric. An American lady, aged 50, a widow, buys of one druggist half a gallon every week. One lady takes morphia and chloral; another morphia and Dover powders; a patient under my care at this time has nearly destroyed herself and ruined her friends by taking morphia and chloroform.

### THE QUANTITY.

A large number of ladies are in the habit of using from one-third to one grain of morphia daily. They have done this for years without imparting their secret to their nearest friends. It was commenced to allay some pain, and then continued for its stimulant effect. The lady I referred to as being under treatment for morphia and chloroform took the first-named drug years before her husband was aware of it.

### MANNER AND TIME OF TAKING.

My observations do not agree with certain writers—for instance, Dr. Kane, who has recently written a book on the hypodermic method—in regarding this way of taking morphine as particularly liable to cultivate the habit:

A physician of the present day without a hypodermic syringe in his pocket, or close at hand, would be looked upon as would have been a physician fifty years ago did he not own and use a lancet. There is no proceeding in medicine that has become so rapidly popular; no method of allaying pain so prompt in its action and permanent in its effect; no plan of medication that has been so carelessly used and so thoroughly abused; and no therapeutic discovery that has been so great a blessing and so great a curse to mankind as the hypodermic injection of morphia. In some respects I agree with this author, but in my experience the hypodermic syringe is not resorted to with the frequency that Dr. Kane has stated. But very few of the 235 cases—not more than four or five—upon which I base my article take the drug in this manner, and only two or three of those who have been placed under my care used the instrument.

The great bulk consumed is by the mouth; and as regards time and frequency of dose, it varies from two to three times a day to a single large dose once in two or three days. It is a curious fact that some of the oldest opium eaters take a large dose at intervals of from one to three days, and that an even and happy effect is experienced during all that time.

### PHYSICAL EFFECTS.

In many cases the deleterious results are very long in making their appearance. Indeed, some take this drug for years and years, and seem to enjoy excellent health, and in no way can they be destinguished from those not addicted to the drug. Only a few days ago I met a gentleman on Carroll avenue who has taken morphine thirteen years, in doses of from two to fifty grains daily. He was well dressed, had a healthy color, and was in every respect as respectable looking as the majority I saw on the street. Some become fleshy, especially when commencing its use, while others emaciate. It makes one logy and sleepy, others vivacious and happy. Sooner or later, however, we find symptoms denoting disordered nutrition and enervation. The opium-eater's countenance, in the greater number of cases, betrays him. It becomes sullen, haggard and apathetic, and the eye loses its brilliancy. All these objective symptoms are most noticeable when the habituate is deprived for even a short time of his usual opiate. We soon find the appetite impaired and digestion poor. The bowels are habitually constipated. There is also vesical and sexual torper. Indeed, every function of the body is performed in a sluggish manner. If from any cause the victim is deprived of his accustomed drug, he soon begins to have intolerable cramps in the muscular system, with involuntary twitchings. The patient by this time is usually weak and feeble.

### MENTAL AND MORAL EFFECTS.

A man avoids society, and before he is fairly confirmed in his habit is tortured with the thought that he is becoming a victim to a habit that he can now only rid himself of by great will-power and bodily suffering. He cannot make the resolution to stop to-day, but defers it until to-morrow. The memory of the poor man is already becoming poor. He neglects his business; he falls asleep for a few moments as he rides in the car, or as conversation lags for a moment with his associates.

Equally marked, and more so, if possible, is the change in the moral sentiment of the individual. He neglects his family. He will obtain his usual proportion of opium by making promises that he knows he is unable to fulfill. He becomes cross and irritable if attempts are made to deprive him of his opiate; and, sooner or later, moral rectitude, every noble impulse, every generous thought, is swallowed up in this terrible fight to obtain more and more of the narcotic, to obtain which, in almost every instance, the victim has become an inveterate prevaricator.

Four brief points, and I am done.

First, let us avoid the indiscreet and reckless habit of prescribing opiates to the nervous class, hysterical women and hypochondriacal men; second, let us have enough interest in the future welfare of our patients to advise and encourage the discontinuance of any preparation containing opium in any form; third, let us co-operate with the family druggist in preventing the refilling of prescriptions containing not only opiates, but alcoholic stimulants; fourth, never, under any circumstances, teach a patient how to use a hypodermic syringe.—*Medical Review.*

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For the Removal of Tan and Freckles.—Dr. Nevins Hyde indorses the formula of Prof. White: ℞. Hyd. bichlor., gr. vi.; acid. mur. dil., ʒ i.; aquæ, ℥ iv.; alcohol, aq. rosar., aa ℥ ii.; glycerin, ℥ i. M. Apply at night and wash off with soap in the morning.

# EXAMINATION OF WELL WATER.*

BY MAGNUS SWENSON,
Instructor in Chemistry in the University of Wisconsin.

There is probably no branch of sanitary science of so great importance as the determination of the quality of water used for domestic purposes, and it is certainly very strange that it receives so little attention. As affecting the public health it is a matter of the greatest moment, and the public cannot afford to ignore this fact, as long as we have the means of determining foul and poisonous waters, and are able to replace them with those that are good and wholesome.

That water contaminated with refuse matter or sewage is not only highly poisonous, but one of the most active breeders of death and disease, is no longer disputed. In nearly every report of sanitary committees we find the most positive evidence of its dangerous nature. Many examples may be quoted showing to what an alarming degree foul water may be the cause of epidemics, and how virulent certain kinds of sewage may become, even in an extremely dilute condition. "It must be remembered that the poison, however trifling, is taken daily, and that although when in robust health we may not suffer from it, it may be sufficient to make itself felt when prostrated by sickness, and our resistance to such influence becomes proportionately lessened."

For some time past I have been engaged in examining well waters, and the analyses show that a large portion, I may say a very large majority of them, are unfit for domestic use, many of them being better fitted for fertilizers than for human consumption; and instead of attributing many of your deaths to "the mysterious dispensations of Providence," they may, less irreverently and more truthfully, be referred to the drinking of bad water.

That many of the well waters are bad cannot be wondered at. A well and a vault cannot exist side by side, with only from ten to twenty feet of porous earth between them, without having their contents mix, sooner or later. The soil cannot purify an indefinite amount of sewage matter; in time it becomes saturated, and the sewage will mingle with your well water. There are numerous places where wells have existed for over twenty years, all but surrounded by vaults and cesspools, and to facilitate the mixing the soil immediately around the well has been treated to daily doses of wash-water and slops; and yet people who use the water would wonder why their children were sick, and look astonished when I told them that their water was wholly unfit for drink. The fact that the well may be sixty to seventy feet deep appears to some to be a sufficient safeguard against the inflow of impurities. They seem to forget that the sides of the well are perfectly porous, from top to bottom, and that the deeper the well the greater is the surface drained by it. In some cases the inflow of sewage is so great as to give the water a decidedly bad odor; but even that does not seem to frighten some people, who believe that instead of a reservoir of filth they are the fortunate owners of a mineral well, declaring that on several occasions they have detected the smell of sulphur. If common well water has an odor of any kind, either when cold or by boiling, it does not come from sulphur, but from decaying organic matter, which is anything but wholesome.

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* Proceedings of the Wisconsin Pharmaceutical Association.

In order to ascertain the quality of a water, I make the following determinations: Its deoxidizing power, expressed in cubic centimeters of a centinormal solution of potassium permanganate deoxidized by one liter of the water. The amount of free ammonia, albuminoid ammonia, chlorine and nitrous acid, all expressed in milligrams pr. liter, or parts in one million. When potassium permanganate is added to water containing oxidizable matter and some free sulphuric acid, the potassium permanganate is decomposed, and the oxygen liberated will be taken up by the oxidizable substances. Therefore, the amount of potassium permanganate decomposed will measure the amount of matter capable of being oxidized in the water. All kinds of organic matter, however, are not equally affected by the potassium permanganate. One may be very readily oxidized, while another is scarcely acted upon. Hence, if a water has a low deoxidizing power, it does not necessarily prove it to be a good water. If, however, it has a high deoxidizing power, it does prove the presence of a correspondingly large amount of oxidizable organic matter, and it also gives a clue as to the kind, for the more easily it is oxidized the more dangerous is its nature supposed to be. Some very eminent chemists use this test instead of the ammonia process—I have used them both—there is a general agreement, although some exceptions were noticed. Free ammonia, when found in well water, indicates sewage or surface drainage, both of which are highly objectionable. Many kinds of nitrogenous organic matter give off free ammonia when undergoing decay. This is especially true of excrementitious matter, part of which decomposes into carbonate of ammonia; and if a well water contains free ammonia to any considerable extent, it is, to say the least, highly suspicious. The albuminoid ammonia represents the nitrogenous organic matter, which has been converted into ammonia by boiling the water with a strong solution of potassium permanganate and caustic potassa. The nitrogenous matter is changed into free ammonia, in which form it is more readily measured. Both this and the free ammonia were determined by the delicate method of neutralizing. Pure spring or artesian well water is free from organic nitrogen, and consequently no albuminoid ammonia will be found in analyzing such waters. The amount of chlorine is estimated to show the amount of common salt present in the water. Pure natural water contains but little more than a trace of salt, while sewage, kitchen slops, and excrementitious matter of all kinds, are highly charged with it. Whenever, therefore, a large amount of sewage is found in a water, a correspondingly large amount of salt is almost invariably present. This association of common salt and sewage is so constant as to be almost without an exception. The important conclusions which may be derived by knowing the amount of common salt, may be inferred from the following remark, by Dr. Angus Smith, in his report to the Royal Commissioners of the water supply of London: "If the amount of chlorine in water, from any district, is pretty well known, and a specimen of that water should indicate rather more chlorides than usual, you may conclude with almost certainty that it is from sewage." Nitrites have been determined as nitrous acid with a solution of iodide of potassium and starch. When this is added to a water containing nitrites and a little free sulphuric acid, iodide of starch is formed, which is of a deep blue color, which increases in depth with the amount of nitrites. The presence of nitrites in well water indicates fresh sewage. Nitrogenous organic matter, so fresh as to be only partly oxidized. The presence of such matter, even in but very small quantities, is enough to make us regard the quality of a water as decidedly doubtful. Dr. Wanklyn says, that if the color is at all deep the water can hardly be fit to drink. More than 20 per cent. of all the city well waters examined by me contain more than 5 milligrams per liter of nitrous acid, a quantity sufficient to produce almost a black color.

So far as I am able to judge, those parts where the water is universally bad are the regions where fevers and diphtheria have prevailed. It would, indeed, be an interesting question, and one of great value to the public health, to ascertain the intimacy of this relation of bad water to diseases. Unfortunately, however, people look unfavorably upon such an undertaking, and are slow to aid in what they consider unnecessary. They have fallen into a dangerous feeling of safety, and nothing short of some frightful epidemic will make them fully realize the danger. It has often been asked, "Can nothing be done to make bad water good?" "This is possible with water free from sewage; but no process has yet been devised for cleansing water once contaminated with sewage, so as to make it fit for drinking. It may be suggested that filtering may be resorted to, or that the sewage may be disinfected, as some are disposed to call certain processes; but the English Commissioners of the water supply of London say that, as applied to sewage, disinfectants do not disinfect, and filter beds do not filter. Both attempts have been costly failures."* The soil possesses very great disinfectant properties; but when refuse matters of all kinds are continually added to it, year after year, the soil becomes saturated, and the sewage finds its way into the wells in an almost unchanged condition. Cistern water, even if very bad, may be made good by filtering through a charcoal filter. The impurities in such water are largely in suspension, and are mostly organic matter and dust from the roof, together with a considerable quantity of free ammonia derived from the atmosphere. By filtering a very bad cistern water through a Kidzie's charcoal filter, which had been in constant use for over two years, 92 per cent. of the impurities were removed. The rather large amount of free ammonia which still remains does no harm, as it indicates nothing but its own presence, as it is all, or nearly all, derived from the atmosphere; while, as before stated, the presence of ammonia in well water indicates the presence of excrementitious matter, especially urine.

To cleanse a well into which sewage is continually flowing is, of course, useless. It may make the water better for a time, but soon it will contain the usual amount of sewage. If the soil is once saturated it can never be relied upon again with safety for the filtration of water for drinking.

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* Popular Science Monthly, vol. XIV., page 51.

I have also found that the contamination depends, to a great extent, on atmospheric changes. During a dry season the soil becomes more and more saturated with sewage; for, as there is not sufficient moisture present to create a rapid current towards the well, the sewage becomes more and more concentrated, until finally a heavy rain falls, and the water, percolating through the porous earth into the well, will carry with it a great amount of the sewage. To prove that this is true, I have made three examinations of two well waters at three different times. The first analysis was made two days after the heavy rain on April 20th, and I found the water to contain a very large amount of fresh sewage; the second analysis was made after two weeks of dry weather, and the water contained about half the organic matter previously found; and the third analysis, made two days after the heavy rain of May 22d, showed even a greater contamination than the first. It thus appears that a water may at times give no very bad indications, and yet may, in a few days, become a source of great danger.

With regard to the nature of the impurities in well water we know very little, the reason for this being the extreme minuteness of the germs which are supposed to cause the disease. It is, however, probable that a water, in order to be injurious, must contain some kind of life which will develop and affect the system. That life does exist in most of well waters contaminated with sewage may be easily shown by adding to the water a little pure sugar; in from twenty-four to forty-eight hours the water will be full of long branching organisms, but that these are the cause of the disease remains yet to be proven; and even if these germs do not develop in a water, it may contain others which may be equally or much more injurious.

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ARTIFICIAL KOUMISS.—Here is another recipe for this purpose: One hundred parts of condensed milk are mixed with one thousand parts of water; one part of lactic acid, one half part of citric acid, and fifteen parts of good Jamaica rum or French brandy are added; charge with carbonic acid gas, bottle, and let stand some days in a warm room till the liquid begins to froth.—*Boston Jour. of Chem.*

## SELECTIONS FROM FORMULÆ PROPOSED BY MR. ROBERT W. GARDNER.

### ELIXIR OF CALISAYA BARK.

| | |
|---|---|
| Tincture of orange peel | 2 ounces. |
| Oil of orange | 15 minims. |
| " cassia | 8 " |
| " anise | 8 " |
| " coriander | 8 " |
| " nutmeg | 4 " |
| " rose | 4 " |
| Extract of vanilla | 2 ounces. |
| Syrup | 50 " |
| Alcohol | 31 " |
| Citric acid | 20 grains. |
| Sulphate of quinia | 130 " |
| " cinchonia | 65 " |
| Phosphate lime, q. s. | |
| Sugar coloring | 10 minims. |
| Water, sufficient to complete 1 gallon. | |

### ELIXIR OF CALISAYA AND IRON.

| | |
|---|---|
| Tincture of lemon peel | 14 drachms. |
| Oil of orange | 65 minims. |
| " lemon | 30 " |
| " cloves | 6 " |
| " cassia | 6 " |
| " nutmeg | 6 " |
| Alchohol | 21 fl. ounces. |
| Pyrophosphate of iron | 1,024 grains. |
| Sulphate of quinia | 130 " |
| " cinchonia | 65 " |
| Phosphate lime, q. s. | |
| Syrup | 3 pints. |
| Citric acid | 25 grains. |
| Ammonia, q. s.. | |
| Glycerin | 14 drachms. |
| Water, sufficient for 1 gallon. | |

### ELIXIR OF CALISAYA, IRON AND BISMUTH.

| | |
|---|---|
| Ammonio-citrate of bismuth | 1,024 grains. |

Water, q. s. to dissolve it.
Elixir of calisaya and iron, sufficient to complete 1 gallon.

### ELIXIR OF CALISAYA, IRON, BISMUTH AND STRYCHNIA.

| | |
|---|---|
| Citrate of strychnia | 9 grains. |
| Boiling water | 4 drachms. |
| Alcohol | 4 “ |

Dissolve, filter, and add elixir of calisaya, iron and bismuth sufficient to make 8 pints and 7 ounces.

### LAXATIVE ELIXIR.

| | |
|---|---|
| Fluid extract of rhubarb | 4 ounces. |
| “ “ senna, deodorized | 2 ounces, 320 minims. |
| Fluid extract of dandelion | 4 ounces. |
| Fluid extract of buckthorn bark | 2 “ |
| Fluid extract of ginger | 2 drachms. |
| Glycerin | 1 pint. |
| Phosphate of soda | 5 ounces, 160 grains. |
| Rochelle salt | 4 ounces. |
| Bicarbonate of soda | 2 ounces, 160 grains. |
| Tincture of lemon peel | 3½ ounces. |
| Syrup | 28 “ |
| Alcohol | 29½ “ |
| Tincture of orange peel | 3½ “ |

Water, sufficient to complete 8 pints.

### ELIXIR OF ORANGE COMPOUND.

| | |
|---|---|
| Tincture of orange peel | 5 ounces. |
| Curacoa flavor | 5 “ |
| Orange flower water | 3 “ |
| Syrup | 26 “ |
| Alcohol | 26 “ |

Phosphate of lime, q. s.
Water, sufficient to complete 8 pints.

### ELIXIR OF BROMIDE OF CALCIUM.

| | |
|---|---|
| Bromide of calcium | 10 ounces, 320 grains. |

Elixir of orange comp., sufficient to complete 1 gallon.

### ELIXIR OF BROMIDE OF POTASSIUM.

| | | |
|---|---|---|
| Bromide potassium | 10 ounces, 320 | grains. |
| Elixir of orange comp., sufficient for 1 gallon. | | |

### ELIXIR OF BROMIDE OF SODIUM.

| | | |
|---|---|---|
| Bromide of sodium | 10 ounces, 320 | grains. |
| Elixir of orange comp., sufficient for 1 gallon. | | |

### ELIXIR OR WINE OF PEPSIN.

| | | |
|---|---|---|
| Solution of saccharated pepsin | 29 ounces, 123 | minims. |
| Acid hydrochloric, C. P. | 29 | " |
| Glycerin | 5½ | ounces. |
| Tincture of orange | 3 | " |
| Phosphate lime, q. s. | | |
| Orange flower water | 3 | " |
| Syrup | 20 | " |
| Alcohol | 17 | " |
| Sherry wine, sufficient to complete 8 pints. | | |

### ELIXIR PYROPHOSPHATE OF IRON, QUINIA AND STRYCHNIA.

Substitute the same quantity of pyrophosphate of iron for the ferric phosphate, and proceed as for elixir of phosphate of iron, quinia and strychnia.

### ELIXIR OF PYROPHOSPHATE OF IRON.

| | | |
|---|---|---|
| Pyrophosphate of iron | 1,024 | grains. |
| Boiling water | 6 | ounces. |
| Tincture of orange peel | 3½ | " |
| Orange flower water | 3½ | " |
| Syrup | 24 | " |
| Alcohol | 26 | " |
| Phosphate of lime, q. s. | | |
| Water, sufficient to make 8 pints. | | |

### CURACOA FLAVOR.

| | | |
|---|---|---|
| Tincture of curacoa comp | 8 | ounces. |
| Tincture fresh orange peel | 16 | " |
| Orange flower water | 12 | " |
| Syrup | 70 | " |
| Alcohol | 72 | " |
| Water | 32 | " |

### WINE OF CALISAYA.

| | |
|---|---|
| Tincture of orange peel | 2 ounces. |
| Oil of orange | 15 minims. |
| " cassia | 8 " |
| " anise | 8 " |
| " coriander | 8 " |
| " nutmeg | 4 " |
| " rose | 4 " |
| Extract of vanilla | 2 ounces. |
| Syrup | 50 " |
| Citric acid | 20 grains. |
| Sulphate of quinia | 130 " |
| Sulphate of cinchonia | 65 " |
| Phosphate of lime, q. s. | |
| Alcohol | 14 ounces. |
| Sherry wine | 3 pints. |
| Water, enough to make 8 pints. | |

### BITTER WINE OF IRON.

| | |
|---|---|
| Citrate of iron and quinia (soluble) | 1,024 grains. |
| Curacoa flavor | 8 ounces. |
| Tincture of orange peel | 8 " |
| Phosphate lime, q. s. | |
| Syrup | 16 " |
| Alcohol | 8 " |
| Sherry wine | 4 pints. |
| Water, enough to make 8 pints. | |

### SWEET WINE OF IRON.

| | |
|---|---|
| Ammonio-citrate of iron | 1,024 grains. |
| Water, q. s. for solution. | |
| Tincture of orange peel | 8 ounces. |
| Curacoa flavor | 8 " |
| Syrup | 24 " |
| Alcohol | 8 " |
| Sherry wine, enough to complete 8 pints. | |

### TINCTURE OF FRESH ORANGE PEEL.

| | |
|---|---|
| Outer rind of fresh orange | 8 ounces. |
| Alcohol, q. s., for percolate | 1 pint. |

## PHOSPHATE OF SODIUM AND ITS IMPURITIES.

Phosphate of sodium is said to be adulterated with carbonate and sulphate of sodium. Is this assertion correct? A qualitative analysis of the article is desirable.

In answer to the above quéry the writer would report that, after a very careful investigation of the subject, experimenting with a number of samples of the salt obtained from different retail houses, representing several manufacturers of the article, that I found them all to contain carbonate of sodium, but only in very small quantities. The specimens all contained sulphate of sodium, varying from twenty-five to sixty per cent. of the crystallized salt. A few of the samples contained small quantities of lime and magnesia. They were all found to contain the orthophosphoric or the common tribasic acid. I also examined for arsenic, which is sometimes present in the salt, no doubt being there through impure sulphuric acid used in its preparation, and in every sample examined failed to detect any, even with the most delicate tests in use; and yet it is hardly possible to enter through this source, as most of the sulphuric acid manufactured in this country is made from sulphur; and when made from sulphur which was not made from pyrites, it rarely contains arsenic, but that made from pyrites, either directly or indirectly, is scarcely ever free from the metal lic poison, and no doubt when present can be attributed or traced to the latter cause.

The writer is of the impression that the sulphate and carbonate of sodium are not present as adulterations, but owing to the manner in which it is prepared cannot be prevented or excluded altogether. The following is an outline of the formula now in use: Calcined bone is treated with sulphuric acid in an earthen vessel. Water is next added, and the whole thoroughly mixed. This is digested for three days, occasionally stirring and adding a small quantity of water to replace that which is lost by evaporation. After standing three days, add boiling water and strain through muslin. Gradually add more boiling water, until the liquid passes tasteless, and allow it to stand undisturbed until complete subsidence. Pour off the clear solution, and evaporate. To the concentrated solution add gradually carbonate of sodium, previously dissolved in hot water, until effervescence ceases or neutralization takes place. Filter the solution and set aside in a quiet place to crystallize. In this formula an excess of sulphuric acid is used, and consequently, on account of the small quantity of sulphate of lime formed, the acid will take up the soda and form sulphate of sodium. It is said that most of the impurities can be got rid of by re-crystallization. If manufacturers were a little more careful, so as not to use sulphuric acid and carbonate of sodium too largely in excess, almost pure phosphate of sodium could be obtained, at least in the first crystallization, since it is utterly impossible in subsequent crystallization to prevent a large contamination when prepared according to the present formula. The main point will be for manufacturers to get at the limit, as, according to my analysis, there is more or less of the principal impurities present. It would be advisable for them to pay more attention to this in the future, or change or amend the present process. The agents used in conducting my investigation were the following:

FOR CARBONATE OF SODIUM.—A strong saturated solution was used, adding hydrochloric acid, effervescence indicating carbonate.

FOR SULPHATE OF SODIUM.—A known amount of the salt was dissolved in water acidulated with hydrochloric acid, and precipitating with barium chloride in solution, washing and drying the precipitate and weighing.

I make my calculations of the amount of sulphate present from the following figures: Two hundred and thirty-three parts of dry sulphate of barium ($Ba\ So_4$), being equal to three hundred and twenty parts of sulphate of sodium ($Na_2,\ So_4,+10\ H_2\ O$:).

FOR MAGNESIA AND CALCIUM.—To a solution of the salt add ammonia. If not rendered turbid there is an absence of both.

FOR ARSENIC AND OTHER METALLIC IMPURITIES.—To a solution of the salt add hydrosulphuric acid, a small quantity of diluted hydrochloric acid, and permit it to stand in a warm place for several hours. If arsenic is present a yellow precipitate is produced. A dark precipitate indicates other metallic impurities. For arsenic I applied some of the other tests in common use, namely, Marsh, Reinsch and Bettendorf's.

FOR ORTHOPHOSPHORIC ACID.—To a solution of the salt add nitrate of silver in solution. It should yield a yellow precipitate, soluble in nitric acid and ammonia.—KENNEDY, *in Proceedings Pa. Pharm. Association.*

# ATTEMPTED SUICIDE BY TAKING MORPHINE AND STRYCHNINE.

BY E. W. KING, M. D.

August 12, 1880, I was called by Dr. J. Palmer, of this city, to go with him into the country to see H. R., aged over seventy years, who, after shooting his son-in-law with intent to kill, took four grains of sulphate morphia, and in half an hour afterward took a "pretty good quantity" of strychnine, which was undoubtedly much more than a minimum poisonous dose. He took both poisons dry, without water, about 10 or 11 A. M. I first saw him about 3 P. M.; he was then in the stable hay-loft, and presented no well-marked symptoms of any poisons. From his condition we were inclined to very much doubt the truth of his statement. By persuasion and force we succeeded in getting him down from the hay-loft, and while doing so observed well-marked twitchings of the muscles in both lower and upper extremities. After getting him to the house and in bed and the room quiet, he began to be stupid, and we could now observe the pathognomonic symptoms of morphine-poisoning—contracted pupil; slow, stertorous breathing, as few as three to four respirations per minute; slowing of heart's action, with occasional intermittence, satisfying us of the truth of his statement; but while thus comatose, the muscles of his abdomen and limbs were quite rigid and hard. A sudden noise to arouse him, or tickling of the sole of his foot while in this condition, would be immediately followed by spasmodic action of the muscles of the extremities and extreme rigidity of the body. This spasmodic action, alternating with the comatose condition, continued, and no medicine was given until after 6 o'clock P. M. His spasms were then intense, and opisthotonus so great that his body would rest on his head and heels, lasting from three to twenty minutes; they would be followed by an interim of longer time, in which he would present the symptoms of opiate narcotism. At 6 o'clock P. M., the following medicine having been procured, its administration was commenced:

| | | |
|---|---|---|
| ℞ | Bromide potash | aa ʒ iv. |
| | Hydrate chloral | |
| | Water | ℥ viij. |

M. S. Tablespoonful after every spasm.

The alternation of spasms and coma continued until about 3 o'clock the next morning, when, after the most severe paroxysm of any, he went to sleep and slept until after noon, when he awoke. He gradually recovered in a few days of all weakness and muscular soreness.

The case is undoubtedly an instance of the antagonism of morphine and strychnine. The effects of either were very slow in producing any symptoms. The manifestations of strychnine were the most prominent, and had not the morphine been taken he would probably have died before we could procure the chloral, or the time elapsing would be so great that the chloral would not prove a successful antidote.

In view of the interest that has recently been taken in the subject of antagonisms of medicines, we concluded this case was worthy of note.

NEW ALBANY, IND.—*Louisville Medical News.*

## PHARMACEUTICAL NOTES.

BY R. F. FAIRTHORNE, PH.G.

*Duboisina, Eserina, Pilocarpina.*—Thinking that perhaps a concise account of these alkaloids, derived from various journals, personal observation and other sources, might be of some interest, I have collected as much information as I could concerning them.

Duboisina is obtained from an Australian tree-like shrub of the natural order solanaceæ, an order furnishing several powerfully poisonous and narcotic active principles. It bears a close resemblance to atropia and hyoscyamia, yet differs from them in several particulars. According to Mr. Gerrard it possesses greater neutralizing power than atropia and is more soluble in water. When heated with strong sulphuric acid a disagreeable odor results, resembling butyric acid, whilst atropia treated in the same manner yields a pleasant aroma. The sulphate is the salt most used and is deliquescent. The alkaloid as obtained at present is a viscous extract-like mass, apparently uncrystallizable. Its therapeutic effects are similar to those of atropia, but more quickly appear and disappear. Dilation of the pupil is quickly produced by solution of the sulphate of duboisina, and a solution containing four grains to the ounce has been known to produce dizziness in a few minutes after application to the eye. Like the active principle of the belladonna, duboisina also has the power of arresting or controlling profuse perspiration, and can be used with decided effect for this purpose when injected hypodermically, one-sixtieth of a grain being usually sufficient.

Eserina is obtained from the Calabar bean and appears to represent the active principles of that substance. It is obtained by treating the powdered beans with alcohol, acidulated with tartaric acid, evaporating the solution to an extractive consistence, dissolving this in cold water, filtering to separate resinous substances, agitating with ether, removing the ether and adding bicarbonate of potassium in slight excess to the aqueous solution, agitating again with ether, which will now take up the liberated eserina and upon spontaneous evaporation will yield the alkaloid. When pure it crystallizes in thin rhombic plates, nearly white, or of a slightly rosy tint. The sulphate is very deliquescent. Its solutions are characterized by becoming red upon addition of an alkali, or if heated with ammonia and evaporated to dryness a beautifully blue coloring substance is produced, which is very soluble in water. If to this an acid is added a dichroic liquid is produced, being violet by transmitted light and carmine red by refracted light. Eserina sulphate, in solution, is used as an application to the eyes and produces contraction. The strength of the solution is generally 1 part to 1,000 or to 800, and as it rapidly alters, soon becoming red, it should be made only in small quantities. A solution in glycerin might possibly keep better. The physiological action of eserina is antagonistic to belladonna. The alkaloid has been used with success in cases of poisoning by the latter drug.

Pilocarpina, the active principle of jaborandi, is obtained by adding an alkali to an aqueous solution of the alcoholic extract, agitating with chloroform and evaporating. It appears to be uncrystallizable, is an oily, light-yellow liquid. It forms, however, crystallizable salts with a number of acids; composition, according to Kingzett, $C_{23}H_{34}N_4O_4$. The salt most used is the hydrochlorate, which occurs in white feathery crystals and is very deliquescent. Solutions of this salt generally produce contraction of the pupil when applied to the eye, unaccompanied by irritation, on which account it may replace the use of eserina in some cases. Hypodermically injected in doses from one-fifth to one-half a grain it produces profuse perspiration and salivation, and can replace the administration of jaborandi by the mouth with the advantage that, when thus used, it does not cause nausea. Its action on the skin is more prompt and certain than that of the plant, owing probably to varieties of jaborandi containing variable proportions of the alkaloid, in the same manner that quinia is found more reliable than Peruvian bark. Pilocarpina is antagonistic in effect to atropia and corrects the dryness of the throat and mouth, which occurs when preparations of belladonna are used. One peculiar effect it possesses is that, when its solutions are applied to the eye, only near objects can be observed.

*Dried Salts.*—The inconvenience attending the dispensing of such salts as contain considerable proportions of water, when prescribed in the form of powders, has led me to dry several of such as are in most common use, namely: Sulphate of magnesium, sulphate of sodium, phosphate of sodium, and sulphite of sodium, which were dried below 120° F., and after being kept near that temperature for four or five days and finding that they ceased to lose weight I found that

400 grains of sulphate of magnesium were reduced to 355 grains.
400 " " sodium " " 180 "
400 " phosphate of sodium " " 235 "
400 " sulphite " " " 220 "

Therefore, if 40 grains of sulphate of magnesium is called for in powder, they can be replaced by 35½ grains of the dried salt, 40 grains of phosphate of sodium by 23½ grains dried; 40 grains of sulphate of sodium by 18 grains dried, and 40 grains of sulphite of sodium by 22 grains dried. Having so often met with difficulty in reducing the undried salts to fine powder I thought that the above information might be of some service to others.—*Am. Journal of Pharmacy.*

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BENZOATE OF SODA.—According to Müller, of Breslau, in *La Presse Medicale Belge*, benzoate of soda has no action on bacteria, and does not prevent infection. It conducts itself very much the same as salicylate of soda. These salts have neither antiseptic nor antiputrescent properties, while benzoic or salicylic acids have these properties in a high degree. The action of these salts varies considerably, according to the plan of absorption. In the stomach they are decomposed by the hydrochloric acid; salicylic acid and benzoic acid are set free, and may act locally as antiseptics.—*Medical and Surgical Reporter.*

# PREPARATION OF OPIUM FOR SMOKING.

BY HUGH McCALLUM,

*Pharmaceutical Chemist, Government Analyst, Hong Kong.*

As the policy of the opium trade from India to China is receiving considerable attention among philanthropists, etc., in England, probably the following account of the process of preparing opium for smoking purposes, as conducted by the present opium farmer in Hong Kong, may be of some interest to pharmacists.

The boiling operations are carried on in a moderate sized building at Shek-tong-tsui, in the west end of the city of Victoria, where there are over eighty Chinese coolies and a few Indian watchmen employed, all of whom live on the premises. The majority sleep in a loft immediately above the boiling rooms, the others in a room on the ground floor, which also does duty as a kitchen, mess room and general store, and is in open communication with the boiling rooms. The employes may therefore be said to live in an atmosphere saturated with the odor of opium, yet all seem in good health. On inquiring if many of them were habitual opium smokers, the information received was that only one head-man smoked regularly, but that some of the others indulged occasionally when any of their friends paid them a visit.

The boiling is conducted in two rooms in open connection with each other, one being set apart for the first boiling, the other for the final. The first boiling room has a row of furnaces along each side, with a few rows running transversely between them; the other has four rows, extending along the whole length of the room. The furnaces are made of a kind of fire clay and are of two sizes, the large size having a diameter of about 24 inches, the small size a diameter of 18 inches, the depth of each being about 9 inches; they are built in with brick, the fuel used is wood charcoal. The pans in which the opium is boiled are made of some kind of copper alloy, and are of two sizes so as to fit the furnaces, their shape being somewhat like a shallow evaporating dish.

The opium is sent every day from the hong (*i. e.*, shop or firm) to the boiling house, the previous day's boiling being then returned to the hong. The average quantity boiled each day is from six to eight chests of Patna opium, this being the only kind used.

The opium is removed from its covering of leaves, etc., moistened with a little water, and allowed to stand for about fourteen hours; it is then divided into pans, 2½ balls of opium and about 10 pints of water going to each pan; it is now boiled and stirred occasionally, until a uniform mixture having the consistence of a thin paste is obtained. This operation takes from five to six hours. The paste is at once transferred to a larger pan and cold water added to about three gallons, covered and allowed to stand for from fourteen to fifteen hours. A bunch of tang suin (lamp wick, the pith of some plant) is then inserted well into the mass, the pan slightly canted, when a rich clear brown fluid is thus drawn off and filtered through chi mui (paper made from bamboo). The residue is removed to a calico filter and thoroughly washed with boiling water, the wash water being reboiled and used time after time; last washing is done with pure water; these washings are used in the next day's boiling; the residues on the calico filters are transferred to a large one of the same material and well pressed; this insoluble residue, called nai chai (opium dirt), is the perquisite of the head boiling coolie, who finds a ready market for it in Canton, where it is used for adulterating, or rather in manufacturing, the moist inferior kinds of prepared opium; the filtrate or opium solution is concentrated by evaporation at the boiling point, with occasional stirring, until of a proper consistence, the time required being from three to four hours; it is then removed from the fire and stirred with great vigor till cold, the cooling being accelerated by coolies with large fans. When quite cold it is taken to the hong and kept there for some months before it is considered in prime condition for smoking. As thus prepared it has the consistence of a thin B.P. or treacly extract, and is called boiled or prepared opium. In this state it is largely exported from China to America, Australia, etc., being carefully sealed up in small pots having the name of the maker (*i. e.*, hong) on each.

The Chinese recognize the following grades of opium: (1) "Raw opium:" as imported from India. (2) "Prepared opium:" opium made as above. (3) "Opium dross:" the scrapings from the opium pipe. This is re-boiled and manufactured as a second-class prepared opium. A Chinese doctor stated lately at a coroner's inquest on a case of poisoning that it was more poisonous than the ordinary prepared opium. (4) "Naichai" (opium dirt): the insoluble residue left on exhausting the raw opium thoroughly with water.

What strikes one very forcibly on witnessing these operations is that the morphia value of the opium can have little to do with its smoking value, because, if so, the mode of manufacture must deteriorate it considerably, owing to the long continued moist heat it undergoes; however, there can be no doubt but the process described has after long experience been found to yield the drug in the most approved form for smoking. This opinion naturally raises the question, which of the definite principles of opium or combinations thereof has the power when smoked, or rather burned in a pipe, the vapors being inhaled, of producing such peculiar effects? The elucidation of this point must be of great interest both to the chemist and physiologist.—*Pharmaceutical Journal and Transactions.*

## ON THE ANTISEPTIC PROPERTY OF THE SALTS OF BRUCINE AND STRYCHNINE.

Professor Carlo Pavesi has observed that solutions of the salts of brucine and strychnine possess, in an eminent degree, an antiseptic and antifermentative power. Meat of any source immersed in a solution of sulphate of strychnine or brucine and left there for months, at a temperature at 16° to 18° C., remains fresh and inodorous. Removed from the solution and dried, it becomes very hard and bitter, because the molecules of the alkaloid have penetrated every part of the tissue. A solution of the alkaloids added to milk, though the latter separates into its liquid and solid constituents, prevents it from further decomposition. Its action upon urine is quite prompt, producing, after a few hours, at a temperature of 15° to 16° F., a mucous saline deposit floating about in a straw-yellow liquid, without any trace of decomposition or development of ammonia. The same effects were obtained when experimenting upon blood, albumin, gelatin, honey, sugar, grain, leguminous seeds—which latter are prevented from germinating—and bitter almonds and mustard—which, if first deprived of fixed oil, are deprived of the power of developing essential oil.

All members of the Strychnos family, particularly the St. Ignatius' Bean and Nux Vomica, are used in tropical countries as remedies, but, singularly enough, only against fevers and poisonous bites. The effectiveness of the remedy in these diseases may possibly be owing to the antiseptic and antifermentative power of the alkoloids. The seed of the species *Strychnos Potatorum*, L., which is common in India, and is known as "clearing nut," is used for clarifying impure or muddy water, by rubbing with it the interior of unglazed drinking vessels. Prof. Pavesi thinks it possible that the antiseptic effects of these seeds are likewise due to the presence of strychnine.—*Bolletina Farmaceutico.*

## IS THERE AN ANTIDOTE AGAINST STRYCHNINE?

*To the Editor.*

SIR: It appears to me singular that in this age of discovery that no antidote against the above dangerous poison has yet been discovered! Persons who are desirous of ending their career in this life chiefly resort to it, knowing that under no circumstances can they recover from its effects; instances, I know, have been recorded where chloroform, properly administered, has succeeded; but the action of the poison is so quick that before a medical man arrives he generally finds it too late to use the means at his disposal.

Some time ago a bank manager, residing in an Australian bush township, informed me that he thought prussic acid was an antidote for it, and gave me his reasons. He stated that in riding through a sheep run accompanied by a greyhound, the dog must have picked up some poisoned meat, probably laid there for that purpose, for as soon as he arrived at home the dog was seized with tetanus, and continued in such dreadful agony that he determined to destroy it by administering to it some prussic acid. Soon after doing so he was surprised to see the dog completely recover, although he administered enough acid to kill two or three dogs. Knowing this gentleman very well, I communicated the fact to a learned professor in Melbourne, with a view to inquiry, but, as yet, without effect.

I trust, however, that as your valuable supplement is read by most of the pharmacists and chemists in Victoria the above facts may tend to elucidate further inquiry. In the mean time, I remain, your obedient servant,

J. HOLDSWORTH.

SANDHURST, 23d July, 1880.

[We, on one occasion, administered a large dose of prussic acid to a dog, which had been poisoned with carbolic acid, for the purpose of speedily putting an end to his sufferings, and, strange to say, instead of causing death, it acted as an apparent antidote.—EDITOR.]—*The Chemist and Druggist.*

## COATING PILLS.

I. I may say that I have tried chalk, gum, starch, isinglass, sugar, French chalk, gelatin, mucilage, glue, simple syrup, albumen and arrowroot. In some instances I have used the above separately, and in others combined them, but obtain the best result as follows: Dissolve one drachm isinglass in one and a-half ounce simple syrup; pour a small quantity whilst warm upon some pills that have been made, say, a few weeks, and become hard. After shaking them about for a short time sprinkle over them some French chalk; place them in a flat-bottomed tin and apply a gentle heat; keep them continually rotating, adding more chalk, if necessary, until dry. I find that the coating neither cracks, nor does it peel off. I had no guide in my first attempt to sugar-coat pills, and if any correspondent is in possession of a better method, maybe he will kindly enlighten his brethren.

II. Make a solution of tolu in ether, nearly saturated (the refuse from making syrup of tolu answers equally well, and is more economical); put the pills into a jar and moisten thoroughly with the solution; then throw them into French chalk contained in the pill-coater, and after rotating in the usual manner expose for a short time to allow the coating to dry; then coat twice in succession as follows: Mix equal parts of fresh mucilage of acacia and water, add two drops of this to each dozen pills, and throw them into French chalk as before; finally remove all the chalk from the coater and polish the pills by rotating them for some time in the coater.

The object in first coating with the solution of tolu is to prevent the discoloration of the coating, which invariably follows if this is omitted.

During an experience of thirteen years I have never found the least objection to the use of tolu.

French chalk, or lycopodium, will be found the best for dusting the pills when rolling, as liquorice and such-like powders adhere to the pills, increasing their size, and otherwise interfering with coating them satisfactorily.—*Chemist and Druggist.*

# NOTES AND ABSTRACTS FROM VARIOUS SOURCES.

Utilizing Milkweed.—A writer in the Providence *Journal* predicts a useful future for the milkweed, which has heretofore been considered only a cumberer of the ground. Its seeds yield a finer oil than linseed; its gum can be used in place of India-rubber; and from its floss a fabric resembling Irish poplin has been made; while the young shoots are used in the spring by some people instead of asparagus, which they resemble in flavor. Now, pertinently adds the writer, if uses can be discovered for the thistle and whiteweed, they may prove friends in disguise.—*Scientific American.*

Lafayette's Mixture.—Under this name the following is often used in the hospitals of this city:

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|---|---|
| Balsam of copaiba | 1 fluid ounce. |
| Solution of potassa | 2 fluid drachms. |
| Sweet spirit of niter | 1 fluid ounce. |
| Mucilage of gum | 6 fluid ounces. |
| Oil of wintergreen | 16 drops. |

The mixture is best made by first shaking in the bottle the balsam with the potassa and sweet niter, and then adding the other ingredients. The dose is a tablespoonful three times a day, after meals.—*Druggists Circular.*

On the Cause and Prevention of Phthisis Pulmonalis.—Dr. Fredrick Eklund, of Stockholm, in a paper read before the Swedish Medical Society, June 18th, 1880, which is now before us in pamphlet form, claims to have found in the sputa of those affected with phthisis small, round, lymphoid cells, filled with what he calls phthisis bacteria (*micrococcus phthisis dryotemenos*). Having further examined samples of earth and decaying animal and vegetable substances taken from districts where phthisis is common, he invariably found micrococci, which were identical with phthisis bacteria, and he concludes from this that phthisis is a disease of miasmatic origin. As a prophylactic against this disease.he considers it of the utmost importance to isolate the houses we live in from the ground on which they stand, by means of asphaltum, or cement; to impregnate the floor planking with paraffine or boiled linseed oil, and to remove the damp air from cellars through chambers surrounding the chimney. Regarding phthisis as a contagious disease, he thinks that the walls of tenement houses should be replastered and papered and the floors scraped whenever there is a change of tenants, and recommends that every possible sanitary precaution be taken to prevent its spread.—*Medical and Surgical Reporter.*

NEW FORMULA FOR FEHLING'S SOLUTION.—In order to replace the ordinary Fehling's solution, which, as is known, decomposes after a time, Schreiter, of Wurtemberg, suggests the following:

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|---|---|
| Salicylate of soda | 20 grains. |
| Sulphate of copper | 20 " |
| Caustic soda | 100 " |
| Distilled water | 400 " |

After filtration a clear blue fluid is obtained. On heating this in a test tube the copper salt is decomposed, and the least trace of sugar present is indicated by a fine brownish-red color. According to Schreiter, this liquid can be perfectly well preserved.—*Druggists Circular.*

THE action of the *Carica papaya* on fibrin has of late attracted considerable attention. M. Bouchut has recently made some interesting experiments as to the action of the diluted juice of the plants on living animal tissue, and finds that the effects produced are similar to those on dead tissue, adenomata and cancers being digested and converted into peptones. The solution used contained one-fifth of papaw juice. If this solvent action can be limited, it would seem as if papaw juice might become a valuable medicinal agent. The living plants are now obtainable in this country, and it may be hoped that the numerous investigations which have of late been made by various experimentalists may lead to some practical therapeutical result. M. Bouchut has also extended his researches on the digestive principle of the papaw tree to the common fig, and the result of his preliminary experiments (*Comptes Rendus*, vol. xci., p. 67), carried out upon the milky juice collected from a fig tree in April last, seems to show that this juice contains a powerful ferment, capable of digesting albumenoid matters. As much as 90 grams of fibrin, added in eight successive portions, at intervals of one or two days, to 5 grams of the milky juice, and kept at a temperature of 50° C., was for the greater part digested, leaving a small amount of a white homogeneous residue, and the solution having the odor of good broth.—*Pharmaceutical Journal and Transactions.*

PHARMACY AND THE PRACTICE OF MEDICINE.—The best students who make the attempt to master the details of materia medica acquire but a vague notion of it, and drop the study as soon as possible, except those who expect to combine the business of pharmacy with the practice of medicine—*a union which always results unhappily, and is not to be approved.*—DR. ROBERTS BARTHOLOW.

COSMETIC POMADE.—The following formula is recommended:

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|---|---|
| White wax | 4½ oz. avoir. |
| Lard | 4¾ oz. avoir. |
| Balsam of Peru | 1 drachm. |
| Oil of orange flowers | 30 drops. |
| Oil of lavender | 5 drops. |
| Oil of cloves | 6 drops. |
| Oil of rosemary | 5 drops. |

Melt the lard, wax and balsam, and stir them constantly until they thicken, when the oils are added. This is then poured into moulds; when cold, wrap up each stick in wax paper and tin foil.—*Boston Jour. of Chem.*

THE WOODEN HAT.—Somewhere about the year 1780, a traveling millwright, footsore, and with the broadest Northern Doric accent, stopped at Soho, the engine factory of Boulton & Watt, and asked for work. His aspect was little better than one of beggary, and Boulton had bidden him Godspeed to some other shop, when, as he was turning away sorrowfully, Boulton suddenly called him back. "What kind of a hat's yon ye have on your head, me mon?" "It's just timmer, sir." "Timmer, me mon; let's look at it. Where did you get it?" "I just made it, sir, me ain sel." "How did you make it?" "I just turned it in the lathie." "But it's oval, mon, and the lathe turns things round." "Aweel! I just gar'd the lathie gang anither gate, to please me. I'd a long journey afore me, and I thocht to have a hat to keep out water, and I hadna muckle siller to spare, and I made me ane."

By his inborn mechanism the man had invented an oval lathe, and made his hat, and the hat made his fortune. Boulton was not the man to lose so valuable a help, and so the after-famous William Murdock, the originator of locomotives and of lighting by gas, took suit and service under Boulton & Watt, and in 1784 made the first vehicle impelled by steam in England, and with the very hands and brain cunning that had before produced the "timmer hat."

HYDRIODIC ACID may be prepared by dissolving iodine in carbon bisulphide in a tall glass cylinder, adding water, which forms a distinct layer on the top, and passing through the iodine solution a current of sulphuretted hydrogen. The hydriodic acid formed is absorbed by the water, while the separated sulphur dissolves in the carbon bisulphide. The conversion is complete when the lower layer, originally violet, acquires a wine-yellow color. The layers are then separated, and the aqueous solution of hydriodic acid is boiled a few minutes to expel any sulphuretted hydrogen that may be present.—*The Druggists' Advertiser and Trade Journal.*

A SUBSTITUTE FOR ALCOHOL IN TINCTURES.—The London Temperance Hospital reports contains some facts of exceptional interest and importance relative to alcohol as a therapeutic necessity, either in the form of liquors or in combination with other medicines. This institution entirely excludes the use of alcohol as a beverage, and in the composition of tinctures, and under all other circumstances, except upon the physician's express order. In the composition of tinctures the institution employs glycerin as a substitute, the preservative qualities of which are said to be superior to those of alcohol, and it is claimed to contribute more satisfactorily to uniformity in strength. This subject is one which calls for careful experiment on the part of the pharmacist, and for conscientious trial by the physician. It is clear that the cases may be frequent in which, the strength and quality of the glycerin tincture being reliable, the glycerin itself, in virtue of its nutritive qualities, would prove useful, nor is it difficult to imagine instances in which alcohol may be so contraindicated as to render its absence from the tincture a matter of no small importance. It seems that this London Temperance Hospital uses absolutely no alcohol, although by its rule it is permitted upon a physician's prescription, although its patients presumably differ in no respect from those of other hospitals. This fact indicates a certain bias of those in charge, which may affect their judgment in the rendering of a report, which seems to imply a belief on their part that the agent is entirely unnecessary. The profession will be slow in accepting the proposition that alcohol has no therapeutic value peculiar to itself, and it will be just as slow in accepting the opinions, unless better supported, of men whose observations have perhaps been blinded and biased by this belief. It is hoped that the influence of this institution may result in curbing the zeal of those members of the profession who have the inclination to abuse a very useful and very reliable remedy.—*Chicago Medical Review.*

ANOTHER THEORY FOR PREMATURE BALDNESS.—According to Dr. Ellinger, water and the regular use of ablutions of the scalp are the principal factors of premature baldness. In 100 individuals troubled with alopecia 85 used ablutions of the head since early youth; and among those who had preserved a luxuriant head of hair to an advanced age eight per cent. only had this habit. At the point of implantation of the hairs, the water forms with the epidermic layers and the sebaceous matter of the hair an emulsion, an oil which concretes and obstructs the hair follicles, which leads first to their distension, then to their atrophy. M. Ellinger thinks a well performed mechanical cleansing, with sand or a wire brush, is not only the most sure means of prevention, but even a good curative for the fall of hair at the commencement.—*Revue Med.*

SOME OF THE EFFECTS OF MEDICAL LEGISLATION.—From the *Medical Register* of the Illinois State Board of Health, for 1880, it appears that the total number of practitioners in the State when the law regulating the practice of medicine went into effect, July 1st, 1877, was about 7,400. Of these only 3,600, or less than one-half, were graduates or licentiates, the remaining 3,800 being unqualified practitioners. The graduates and licentiates at the present time number 4,825, and the non-graduates 1,500; or, in other words, the number of qualified practitioners has increased by about 1,225, while the number of unqualified practitioners has decreased by 2,300, which gives a diminution in the total number of practitioners equal to 1,075. The number of itinerants in the State in 1877 was 73; in 1880, only nine. The number of cancer doctors in 1877 was 23; in 1880, only four. Do we need any more eloquent plea for sound medical legislation? Are there no other States that require a similar purgation?—*Medical and Surgical Reporter.*

## REVIEW OF CHICAGO DRUG MARKET.

**Trade continues very active. Quinine has declined to $2.85, and will probably go a little lower. Iodine and the iodides are lower. Buchu, some time ago offered in lots at 3½c. to 5c., is now 35c. Manna has advanced to 65c. Glycerin has recently begun to boom, and is now 26c. Red rose leaves (petals) are now $2.00. Assafœtida has stepped from 25c. to 35c., on account of the epizootic. Nitrate of strontia has jumped from 20c. to 75c. per lb., on account of the unusual demand for campaign purposes.**

| | | |
|---|---|---|
| Acid. Nitric | lb. | 12 @ 14 |
| " Tartaric | " | 54 @ 55 |
| Aloes | " | 16 @ 50 |
| Amm., Carbonate | " | 22 @ 25 |
| " Muriate | " | 14 @ 16 |
| Bleaching Powder | " | 4 @ 5 |
| Blue Vitrol | " | 9 @ 11 |
| Borax | " | 12 @ 13 |
| Camphor | " | 28 @ 30 |
| Cantharides | " | 1.25 @ 1.40 |
| Cassia | " | 24 @ 26 |
| Castile Soap | " | 8½ @ 17 |
| Chamomile Flowers | " | 30 @ 38 |
| Cinchonidia, oz. bots | oz. | 95 |
| Cloves | lb. | 45 @ 50 |
| Cream Tartar (pure) | " | 36 @ 38 |
| Cubebs | " | 30 @ 32 |
| Cuttle Fish Bone | " | 28 @ 30 |
| Ergot | " | 60 @ 70 |
| Ginger, Afr | " | 10 @ 15 |
| " Jam | " | 25 @ 30 |
| Glycerin | " | 26 @ 85 |
| Insect Po | " | 68 @ 75 |
| Iodine, Resub | " | 4.25 @ 4.50 |
| Ipecacuanha Po | " | 1.50 |
| MERCURIALS— | | |
| Blue Pill | " | 48 @ 50 |
| Calomel | " | 68 @ 70 |
| Corrosive Sub | " | 58 @ 60 |
| Mercurial Oint | " | 44 @ 50 |
| Red Precipitate | " | 78 @ 80 |
| Morphia Sul. P. & W. ⅛ oz. | | 4.85 @ 5.00 |
| Nutmegs | lb. | 1.10 |
| Oil, Anise | " | 2.00 @ 2.25 |

| | | |
|---|---|---|
| Arnica Flowers | lb. | 17 @ 20 |
| Assafœtida | " | 33 @ 35 |
| Balsam Copaiba | " | 65 @ 68 |
| " Tolu | " | 75 @ 80 |
| Bees-wax | " | 30 @ 33 |
| Oil Bergamot | " | 2.85 @ 3.00 |
| " Cassia | " | 1.25 @ 1.35 |
| " Castor | gal. | 88 @ 1.00 |
| " Lemon | lb. | 3.50 @ 3.50 |
| " Olive | gll. | 80 @ 3.50 |
| " Pennyroyal | lb. | 1.25 @ 1.30 |
| " Peppermint | " | 3.25 @ 4.00 |
| " Sperm (pure) | gll. | 1.35 @ 1.40 |
| " Wintergreen | lb. | 3.00 @ 3.25 |
| " Roses | oz. | 5.00 @ 8.00 |
| Opium, prime | lb. | 7.75 |
| Pepper, Cayenne | " | 35 @ 37 |
| Potass., Bromide | " | 36 @ 40 |
| " Chlorate | " | 22 @ 25 |
| " Iodide | " | 3.00 @ 3.10 |
| Quicksilver | " | 53 @ 55 |
| Quinine, P. & W., 1 oz. btls. | | 2.85 |
| Salicin, 1 oz. vials | oz. | 40 @ 45 |
| Santonin, 1 oz. vials | " | 70 @ 75 |
| Seed, Canary | lb. | 3¾ @ 4½ |
| " Hemp | " | 3¾ @ 4½ |
| Senna | " | 15 @ 25 |
| Seneka Root | " | 65 @ 70 |
| Shellac | " | 50 @ 55 |
| Soda, Bicarb | " | 4 @ 6 |
| " Sal | " | 1¾ @ 3 |
| Squills | " | 12 @ 14 |
| Sugar, Lead, white | " | 16 @ 18 |
| Tonqua Beans, Angostura | " | 2.50 @ 2.75 |

# THE PHARMACIST.

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## EDITORIAL.

### EFFECT OF FREE TRADE ON PHARMACY.

Since the Presidential election, there seems to be a general impression that before the next similar election new parties will be formed, presenting new issues, of which the question of Free Trade is likely to be most prominent. Before the party lines have been formed, and before we have become identified with any party, so as to be biased or prejudiced in opinion, is the proper time to reflect on the probable effect of a change in our present policy. Without doubt our schedule of duties on imports needs revision, and may be amended; but will we be ultimately benefited by the entire abolition of duties on such articles manufactured or grown in foreign countries as can be produced in this country, is the quesion we must decide.

If the tariff were removed from drugs and chemicals only, and retained in the case of other dutiable goods, the effect would probably be:

1st. A decline in the price of all drugs and chemicals now subject to duty, the decline corresponding to, but never equaling, the amount of duty.

2d. An advance, owing to the suspension of home producers, and the drain on European markets.

3d. A second gradual decline to about the rates touched by the first movement.

What effect would this have on retail druggists?

At first they would be enabled to buy at lower rates and sell at nearly the old prices; but very rapidly *competition would compel a decline in retail prices* to a point at which the percentage of profit would be about the same that now prevails.

Since the demand for drugs and medicines is limited in amount, and cannot be materially increased even by favorable rates, it will follow:

1st. That the annual purchases and sales in a store will be curtailed nearly in proportion to the average decline in prices.

2d. That the net profits of a business will shrink nearly in the same proportion.

If absolutely free trade were extended to all departments of industry, there can be no doubt that a general decline in prices would follow, attended by a general stagnation in manufactures. Our laboring men and women will not readily accept the current wages of Europe; yet they must ultimately do so, if we throw open our markets to the world. While the general depression resulting from such a change might last, the drug business would suffer from the general scarcity of money in the hands of the laboring classes, although to a less extent than many other branches of trade. After the change had been effected, and the people had resumed labor, in perhaps modified forms and at reduced wages, would we be as well off as we are now?

Evidently we should make less money; but money would have increased value in exchange. So long as we remain at home, it does not matter whether we make $20 or $40, provided the prices of commodities which we may wish to buy vary as our income changes. But if we go abroad, we shall find that $20, no matter how slowly and difficultly obtained, will only buy half as much as $40, no matter how easily the latter may have been acquired.

Consumers rightfully complain that, in consequence of the tariff, many articles of prime necessity, and among others, many drugs and chemicals, are very high; that home competition has not effected a reduction of prices to fair rates. Very well. We are glad of it, because in all such cases a promising field for enterprise still exists. Instead of complaining, it would be the part of wisdom to embark in the manufacture or growth of such articles.

A high tariff does not necessarily mean high prices, which, in most cases, will be prevented by home competition; but it serves to secure the home market exclusively to our producers. Without doubt our quinine makers can prosper at a less percentage of net profit with the whole market to supply, than when they are limited to an uncertain part of the demand. The formation of rings and unions by manufacturers, so as to hold prices up to nearly the point at which their articles can be imported, is, of course, unfortunate to consumers; but there is no law against additional competition, or indeed against the transfer of European factories to this country.

We cannot see how a reversal of our national policy can possibly result in benefit to our business, and therefore are quite content to let well enough alone.

In regard to all those articles used simply as luxuries, as, for example, perfumes, and articles whose use is to be deprecated, as, for example, opium prepared for smoking, oil cognac, etc., as well as patent medicines, whether domestic or foreign, we say, pile on the duties, or tax; it can hardly go too high.

It must never be forgotten that the Government must be supported directly or indirectly. We see no objection to the punishment of vice and luxury by subjecting them to taxes, which otherwise must come from other sources.

The demand for free trade will come chiefly from the following classes:

1st. Capitalists, who, having fortunes now, want low prices so that goods and service shall cost them less, and thus practically make their fortunes greater.

2dly. From agriculturists, who, having no fear of foreign competition and therefore desiring no protection, wish to be relieved from the onus of paying the higher prices resulting in some cases from protection. This class, however, are in as much danger as are the manufacturers. But for manufacturing interests, more than half the population of this city could be spared for agriculture, indeed, would be compelled to resort to it in some form for subsistence. If, however, most of the capital and labor of the country is driven into agriculture, home competition will rapidly lower prices of products; while Europeans, having then a monopoly in manufacturing, will not be slow to avail themselves of their advantages by raising prices of their goods.

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M. G. Delanney says "that parents who are fed too little, or too much, produce girls, boys being born when they are simply well fed."—*Detroit Lancet.*

# A DESTRUCTIVE FIRE.

About noon, November 20th, a fire began in the third story of the large wholesale drug house of Lord, Stoutenburgh & Co., Nos. 72 and 74 Wabash avenue, and continued to extend, despite the efforts of the fire department, until the entire double building, with its contents, was destroyed. In the basement, which was filled with water which soon froze, owing to the intensely cold weather, are a few articles of value, which may yet be recovered. A lot of druggists' sundries on the main floor were also saved, in a somewhat damaged condition. The total loss will exceed the small amount of salvage by probably one hundred and fifty thousand dollars. The insurance is one hundred and thirty thousand dollars, ample to enable the firm to resume at once in a vigorous condition.

The cause of the fire is the old stereotyped one in the drug business, the ignition of sulphuric ether. A girl in the third story, which was used as a pharmaceutical laboratory and general "wet room," was bottling a quantity of sulphuric ether and sealing the bottles with wax melted by an alcoholic lamp, when, upon forcing in a cork, the bottle broke, scattering its contents upon her and in the vicinity of the lamp. In an instant the spilled liquid was in flames, and a moment later the entire lot added fuel to the fierce fire. Another girl near the scene was enveloped in the flames. One of these ladies, Miss Anderson, is now dead, and the other lies in a critical and suffering condition. The gentlemen in this room did their best to rescue the girls and subdue the fire, and in their devoted efforts suffered fearful burns, with only the success of bringing out the girls alive.

Notwithstanding the frequent disasters resulting from the ignition of ether, few seem to realize its dangerous nature. Dr. Squibb nearly lost his life and wholly lost his beauty by an accident almost exactly identical with this. Gordon's laboratory was once destroyed by the explosion of the vapor of ether, although the still in which it was being made was over thirty feet from the nearest fire. The heavy vapor had formed a stratum near the floor, unnoticed by the men until it extended to the fire of the boiler furnace, when the explosion occurred, the flame running to the still as if aided by a large train of gunpowder.

## THE PATENT MEDICINE COMET.

Mr. Warner, the great "safe" patent medicine man of Rochester, New York, some time since erected a fine observatory, which he equipped with a splendid telescope, and other necessary and convenient instruments for astronomical research. Prof. Swift, an astronomer of note and ability, was placed in charge of the institution, and has already immortalized himself and Mr. Warner by the discovery of a comet now in the constellation Pegasus. The comet appears small, and has a very slow rate of apparent motion. Therefore it is a small comet near the earth, or a large one at a great distance, or a medium-sized one at a moderately great distance. On account of its slow motion it is evidently coming nearly straight at us, or going directly away from us, or taking a rest on its journey. As long as it "keeps its distance," and continues to behave in its present amiable manner, we propose that it shall be known as "Warner's Safe Comet."

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THE PROPOSED STATE ASSOCIATION.—We have before us a call for a convention of the druggists of the State, with the view of forming a permanent organization, and especially of framing and urging upon our next Legislature the passage of a proper law regulating the practice of pharmacy in this State. The necessity for such legislation is so obvious that we doubt not a hearty response will echo the call.

*Later.*—We have just received a copy of the call above referred to, signed by about seven hundred names. The convention will meet at Springfield, Ill., December 7 and 8; headquarters at the Leland Hotel. Let all attend who can possibly do so.

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THE BOTANICAL NATURE OF WHOOPING COUGH.—In 1871 Dr. Ludwig Letzerich announced that he had discovered the cause of whooping cough to be a peculiar fungoid growth, which first germinates under the tongue and then rapidly pervades the air passages. Henry A. Mott, Jr., Ph. D., has recently investigated the subject and confirmed the statements of Dr. Letzerich.

Mr. Mott finds quinine to be an antidote by virtue of its well-established power to destroy microscropic vegetable organisms. If this is the true theory of whooping cough, why is the same person not usually subject to repeated attacks? If the growth of this fungus destroys any particular tissue not again renewed—a circumstance not yet observed—would it not be possible to effect the same destruction chemically and thus ward off the disease?

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WE TAKE this occasion to state to our subscribers that this is the last number of this volume, which completes another year; and to those few who are in arrears, that the subscription to THE PHARMACIST is due *in advance.*

To those who change their location we desire to say, we will readily alter their address on notification by postal card, but we cannot replace copies that have been sent to their former address through their failure to notify us. We can on notification stop sending for a time until located, and then forward all at once.

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A VERY USEFUL BOOK.—Almost every druggist finds it necessary to keep a cost book for the numerous articles in his store. To write the name of each article takes much time, and when this is done it is found to be of but little use, because so incomplete and ill-arranged. John Nelson supplies this want completely, with his recently published "Druggists' Pocket Price Book." Price, $2.00. Address JOHN NELSON, Cleveland, Ohio.

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TO REMOVE stains of nitrate of silver, sulphide of silver or sulphide of mercury from the hands or from clothing, first thoroughly moisten the spots with compound tincture of iodine, and then wash in a strong solution of cyanide of potassium, and finally rinse well in water.

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TO MAKE RANCID BUTTER SWEET.—According to a recent German patent, granted to Dr. Spormann, of Hamburg, rancid butter may be made sweet by kneading it with perfectly clear lime-water, in the proportion of five parts of butter to one part of lime-water. With one pound of butter the kneading will require about five minutes. Butter thus treated takes a bright yellow color. After the lime-water is poured off, the butter is washed with pure, clear water, mixed with sufficient salt, and is then ready for use.—*Chem. Zeit.*

## QUERIES AND ANSWERS.

"H. W. A. F." writes: "Can you or any of your readers tell how to remove tannic acid spots from clothes?" If the tannin has found any metallic or alkaloidal compound in the clothing, or if any such compound has been added, an insoluble tannate, it may be of iron, is the cause of the spot. Such spots are generally removed by oxalic or hydrochloric acids, the use of which should be followed by washing in a dilute solution of ammonia. In case the above means fail, assuming that the ordinary solvents of tannin, as hot water, alcohol, etc., have been unsuccessfully tried, we suggest the application of Labaraque's solution, or a solution of chloride of lime, to which a few drops of hydrochloric acid should be added at the moment of use.

A correspondent in Texas writes that he has used the appended formula for "chronic eye disease" with success, but wishes other formulæ:

| | | |
|---|---|---|
| ℞ | Acetate of zinc | grs. ij. |
| | Acetate of morphia | gr. j. |
| | Acetic acid | ʒ j. |
| | Pure water | ℥ ij. |

Mix.

But for the acetic acid, which to us appears to be an unnecessary irritant, his formula seems good enough for ordinary cases of inflammation and slight ulceration of the conjunctiva of the eye (sore eyes). A solution of muriate or sulphate of berberina, of the strength of one or two grains to the ounce of water, is an excellent eye-water. In cases of malignant or very persistent ulceration of the membranes about the eye, we should use iodoform by direct application of the finely powdered crystals to the diseased tissue.

"F. F.," of Wisconsin, wishes a good formula for unguentum cupri subacetatis. Probably the following will answer:

| | | |
|---|---|---|
| ℞ | Cupri subacetatis | ʒ ss. |
| | Unguent. simp | ℥ j. |
| | Ol. rosæ | gtt. j. |

Reduce the copper salt to a fine powder, and then thoroughly incorporate it with the other ingredients by means of the spatula or mortar.

# ANOTHER ANTIDOTE TO ARSENIC.

In the *American Journal of Pharmacy* for August, 1880, p. 430, is an excellent method for preparing an antidote to arsenic, which is recommended by Dr. McCaw, a Canadian physician. The following is the formula:

| | | |
|---|---|---|
| ℞ | Tincture of chloride of iron | ℥ j. |
| | Bicarbonate of soda or potash | ℥ j. |
| | Tepid water | a teacupful. |

Mix.

Dr. McCaw gives a preference for this antidote over all others, for two reasons: first, it formed the surest antidote; second, the ingredients are always accessible. That the ingredients are always accessible, the reader will readily see; that it is a sure antidote, I proved by the following experiment: Having prepared the antidote as above described, I let it drain on a filter for a short time, and then mixed a portion of the magma left on the filter with a solution of arsenic containing about half a grain. After stirring the mixture and filtering, the filtered liquid gave no evidence of the presence of arsenic by Marsh's test. This showed the antidote was a sure one.

I was also induced to test the efficacy of another antidote, viz.: the freshly prepared sesquioxide of magnesia,* recommended by Bussy. (U. S. Dispensatory, 14th ed., p. 30.) I dissolved an ounce of sulphate of magnesium in a small quantity of warm water and added aqua ammonia to saturation, which threw down the proposed antidote. After draining for a short time on a filter, a portion of the magma was mixed with a solution of arsenic, and the mixture stirred and filtered. The filtered liquid gave no evidence of the presence of arsenic by Marsh's test. This would seem to show that the sesquioxide of magnesia is another sure antidote to arsenic, and the fact that the ingredients, Epsom salts and hartshorn, are so often found in the family gives it an advantage over the antidote recommended by Dr. McCaw.

PHIL. HOGLAN.

NEWCOMERSTOWN, OHIO, August 21, 1880.

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* The author probably means the hydrated oxide, $MgH_2O_2$, as we know of no sesquioxide of magnesium.—ED. P.

# SELECTIONS.

## THE MEDICO-LEGAL SOCIETY OF PHILADELPHIA.

A meeting of physicians and druggists, called by the Committee on Medico-Pharmaceutical Abuses, acting for the Medico-Legal Society of Philadelphia, was held at the College of Pharmacy, September 24th, for mutual counsel in regard to devising some plan for correcting and advancing the interests of Medical and Pharmaceutical relations.

Mr. Wm. B. Thompson, pharmacist, was called to the chair, and Dr. R. G. Stretch was chosen secretary.

The Medico-Legal Society was represented by Drs. Oliver, Schoales, Gruel, Stretch, Crandall, Nash, Peltz, Blackwood and Swayze.

The Pharmacists were represented by Prof. Remington, of the College of Pharmacy, and Messrs. Blair, Wiley, Needles, Niskey and Evans.

The chairman of the committee, Dr. Swayze, opened the subjects that claimed special consideration with a comprehensive and argumentative paper on the Medical and Pharmaceutical Relations, in which he spoke of the professional and pecuniary disadvantages sustained by the regular medical practitioner, growing out of the existing status and practice of pharmacy. He said that the office of the physician was to diagnose diseases and prescribe the proper remedies for their relief, while that of the pharmacist was to prepare and compound the remedies needed by the physician. But it has come to pass that, while the prescription case of the druggist is tastefully stored with remedies to *aid* the physician in the treatment of disordered health, too often the windows and counters are blockaded and bristling with pharmaceutical *hinderances or impediments* to the physician's professional and business prosperity, in the shape of advertised and money-boosted patent and proprietary nostrums for every real and imaginary ailment, by the dispensation of which the druggist virtually makes *himself* the practitioner, and assumes the treatment of diseases for which the wrappers effusively recommend them.

He also spoke of the practice of some pharmacists of taking into their stores homœopathic specifics for general introduction and sale, and of the odium with which the medical and pharmaceutical professions have been smirched by the dirty, unscrupulous compact for percentage *divvy* on prescriptions, which merits the most prompt effacement, as being alike unfair and unjust to pharmacists and physicians in general and the confiding public in particular.

One of the most serious grievances of which he complained was the grave injustice done physicians by druggists, who, without being so authorized by the prescriber, frequently and indefinitely renew prescriptions intended by the physician for temporary employment only, and, in many instances, making them up for various persons and families other than the one for whom intended, and thus seriously hazarding the physical and moral welfare of patients and people, by the prolonged use of what was designed for but transient employment.

He also spoke of the practice of druggists prescribing for patients over the counter, which was a great injustice to the regular physician. He then concluded with the following remarks:

"We believe these are vitally important questions for the candid consideration of all pharmacists who feel with us a mutual desire to guard the honor of our *alma maters*, maintain an ever-defensible professional integrity, and accord in practice to our fellow-laborers the charmed element of all true brotherhood, the infallible precept of the golden rule, 'Do unto others as you would others should do unto you.'"

### DISCUSSION.

Prof. Remington said that, inasmuch as the points embraced in the paper were of great importance, he would propose that they be taken up in their order for consideration, that more definite conclusions in regard to each might be thereby reached. He therefore offered a motion to that effect, which was carried.

1*st*. *Patent Medicines*. Prof. Remington said, in his early business life he put away all patent medicine signs and medicines from sight, and thus avoided catering to the habit of displaying and selling patent medicines. Dr. Crandall was the first physician who had ever said, on coming into his drug store, "Why, I don't see any patent medicine or medicine signs displayed in your store!" When people inquired for these articles he sold them, but did not recommend them. He is not aware that he gets any more patronage from physicians on this account. But he believes the patent medicine business is pernicious to the public, and he was ready to join hands with physicians to exclude patent medicines.

Mr. Needles referred to the recommendation of Swayne's Panacea by a college professor. He does not countenance the use of patent medicines, but believed physicians were sometimes responsible for their employment.

Dr. Oliver said that Swayne's Panacea was the introduction of patent nostrums in this country. It was a long while ago that the recommendation of that professor of the University of Pennsylvania was obtained, and the present professors of our medical colleges would *not* give their names to recommendations. He feels convinced that good results have already taken place in Philadelphia as the result of the efforts of the Medico-Legal Society's proceedings. Certain druggists have already removed every patent medicine sign and put the nostrums all out of sight, and their prescription lists have more than doubled as a consequence. He referred to the case of a Cincinnati druggist who banished all patent medicines from his trade, and made a fortune by legitimate pharmacy.

Dr. Crandall stated the character and objects of the Philadelphia Medico-Legal Society, and said, "We want to know what agreement can be made between physicians and druggists concerning the abolition of patent medicines from the stores of all respectable pharmacists." He also interrogated Prof. Remington in regard to whether the patent medicine abuse was discountenanced by the Pharmaceutical Code of Ethics.

Prof. Remington responded that there is nothing special in the Code, but the attention of students was directed to them in lectures and valedictory addresses. There was no penalty attached by the Code to the practice of dealing in patent medicines, but instructors endeavored to inculcate proper pharmaceutical ideas.

Mr. Blair criticised some remarks made by Dr. Crandall in regard to the increasing dissatisfaction of physicians, who had determined to move for reform in the matter of pharmaceutical abuses, and in case of failure to effect any compromise with pharmacists would then carry their own medicines as a practicable alternative. Mr. Blair added that the remedy for the trouble was plain—let physicians patronize the druggists, and those only, who do legitimate business and drop patent medicines.

Dr. Blackwood thought we should, by committee or otherwise, see who of the druggists would put patent medicines away, neither recommend nor advertise them, and stand by legitimate pharmacy. Patent medicines harm the public much more than they do the physicians.

Prof. Remington said there was evidently unanimity of feeling on the question of patent medicines, and suggested that the best way to accomplish reform would be to get druggists to agree not to sell or recommend them.

2*d*. *Homœopathic Specifics*. Prof. Remington and Mr. Needles did not think druggists took them into their stores for sale to any extent. Several up-town physicians testified that a large number of druggists in the northwestern part of the city took hold of homœopathic specifics as agents, and put up signs, two or three years ago, but the thing was dying out, through the disfavor of regular physicians.

Mr. Niskey thought physicians were much to blame for the introduction of "homœopathics," because they prescribe such disgusting mixtures for children and women, who are averse to horrid doses. Doctors were often ignorant or indifferent to the necessity of rendering prescriptions palatable.

Mr. Blair thought most druggists are honorable, and if approached properly would refuse to sell homœopathic medicine, etc.

Prof. Remington said all things begin in an humble way, and all reforms must have a beginning. He would therefore offer the following:

*Resolved*, That the subjects under consideration be referred to the Philadelphia Medico-Legal Society, and that they be requested to send a committee to all respectable druggists, requesting them to place out of sight all patent medicines, and discourage their sale.

He also proposed that all said druggists subscribe their names to such agreement.

The motion being seconded, Prof. Remington's resolution was adopted.

3*d*. *Percentage Compact between Druggist and Doctor*. Prof. Remington thought it difficult to correct this evil. The druggists have no way of reaching it. If the doctors could reach it the pharmacists would be thankful.

Mr. Needles did not personally know of any such cases.

Dr. Oliver confidently assured him that this evil existed, especially in the upper part of the city. He knows four men who will only allow prescriptions to go to one certain drug store.

Prof. Remington exhibited a "cipher" prescription, in copy, that was sent to his store, and had been prescribed by a professor in the University of Pennsylvania, and intended for a certain other drug store only.

Mr. Blair said the same professor had diverted some of their customers to the same druggist.

Dr. Swayze spoke of a certain physician, now deceased, who was run down with business by the agency of certain druggists in different sections, and sent a patient eight squares to a certain apothecary for flaxseed meal to make a poultice.

Dr. Blackwood knew of but two druggists who did this kind of business. They were of inferior standing.

Mr. Niskey mentioned a private prescription put up by one party for $3, which he put up, after getting the formula, for fifty cents.

By general consent it was thought proper to have no business intercourse with either druggists or doctors who were parties to the underhand conspiracy.

4*th*. *Prescribing over the Counter* and *Renewing Prescriptions* were considered together. Prof. Remington thought that nearly all druggists would recognize a request, written or printed on a prescription, "Not to renew." He had stopped renewing a doctor's prescription at his own request.

Mr. Needles thought by renewing prescriptions a great injustice was done physicians. He personally knew of *one* doctor who had lost *many* dollars by the renewals of a certain prescription.

Mr. Niskey spoke of patients calling for copies of prescriptions, and undoubtedly having them often renewed. It was important to understand what the rights were in such a case.

Mr. Needles said he made it a rule not to give the original.

Mr. Blair said a printed request on blank would not always meet the case. He thought a private mark, such as (D. R.) "Don't

Renew," would attain better results. He spoke of a prescription containing acid hydrocyan. given for an adult, but renewed for a child.

Dr. Blackwood spoke of a case of poisoning in a child, because of frequent and unauthorized renewals of a certain prescription.

It being the voice of several present, including Mr. Needles and Prof. Remington, Dr. Schoales moved that the consideration of these important points be continued to another meeting, and when we adjourn it be to meet in the College of Pharmacy on Friday, October 1st, at 3 P. M. Adopted.

President Thompson embraced an opportunity to say that he hoped "we would come together in a friendly spirit, and we must do so, if we hope to accomplish the desired object."

As the hour was growing late, the meeting adjourned, as per resolution.

An adjourned meeting of the Committee of the Philadelphia Medico-Legal Society and a number of other physicians met, with a number of pharmacists, in the Museum of the College of Pharmacy, October 1st, 1880. Dr. Stubbs occupied the chair, and Dr. R. G. Stretch acted as secretary. The following physicians and pharmacists were present: Physicians—Drs. Stubbs, Swayze, Buckby, Nash, Prall, Mitchell, Butcher, Girvin, Graydon, Shelly, Crandall, Oliver and Stretch. Pharmacists—Prof. Remington, Messrs. Bullock, Magill, Niskey, Musselman, Thompson, Boring, Davis, West, Robbins, Blair, Naulty, Wall, Reiman and Wiley.

The minutes of the last meeting were read and approved.

Dr. Swayze opened the discussion by alluding to the various questions which had been up for discussion at the previous meeting, together with the results obtained. He then continued, saying:

"We are here to-day to proceed with our deliberations in a spirit of friendliness and fraternity. In the responses to the presentation of the subject at our former meeting there were several points advanced by our pharmaceutical friends which deserve consideration at the outset to-day. One was, 'Would physicians throw the weight of their influence in favor of such pharmacists as would honestly banish patent and proprietary nostrums and the other encroaching abuses specified, and confine themselves to legitimate pharmacy?' We unhesitatingly respond, we entertain no doubt that the honorable regular practitioners would do so in good faith. As a slight evidence of the earnest feeling of the profession on the subject of pharmaceutical irregularities, we have presented to just a few of the physicians of this city, for their signature, an Appeal to Pharmacists, which appeal was immediately signed on the reading of its object, no one declining, but all affirming they were heart and hand with us in this needed work. We believe a canvass of this city would demonstrate that all thoughtful members of the medical profession cordially accord the same testimony.

"Another point advanced by pharmacists was the large amount of money invested in patent medicines. If the point raised has reference to the interests of the *patent medicine maker* or *speculator*, it has no legitimate concern with our present issue. The fact that patent nostrum speculators put large capital into their speculation is not a reason why either physicians or pharmacists should loan these nostrum capitalists professional agency and influence towards coining fortunes out of the gullible public, and our local patronage in particular.

"Patent nostrum speculations thrive because their local representatives enable them to thrive. But if the point advanced referred to the stock of these stuffs now in the hands of retail druggists, the problem is one of scarcely any significance compared with the great fundamental principle of right and justice, for which we now respectfully but most earnestly contend.

"Another point advanced was the old mooted one of proprietorship of the prescription. It was answered by one of our pharmaceutical friends; he believed it had been settled legally that the prescription belonged to the patient. This is a misconception. If by this is meant that the pharmacist is under obligation to renew prescriptions whenever the one prescribed for, or others, apply for such renewals, it is a misconception, even of statute, if there be any such. Law is the guardian of the public welfare; its spirit and purpose is that of protection. It does not give a man the right to abuse himself, or his family or neighbor. It does not, in spirit, authorize the jeopardy of health or life. The law recognizes the individual sovereignty of purpose. The spirit of the purpose is recognized as defining the merits of the acts. Well, now, the only problem to be grasped is the *purpose* of the physician in writing his prescription. The patient's health becomes disordered; the functions of a physician are deemed necessary. The physician's knowledge and experience and judgment are brought into requisition. He considers the case, diagnoses the diseased actions, determines what remedies should be used in the case. He charges a fee; but does he charge for the professional service he has rendered, or does he *sell* the *prescription* (the mere directions he has given) for the amount of that fee? We never *sell* a *prescription* in such professional service, any more than does a commanding officer *sell* his *order* to another officer. Nor does the physician grant to the patient or the druggist any more right to repeat renewals of prescriptions than does a commanding officer grant to a subordinate officer the right to repeat his orders at the wrong time or place, or repeat them at all unauthorized. If the physician has no moral right to jeopardize the welfare of his patient or the public, common sense must teach that he would not so stultify himself as to grant to the patient or the druggist a *carte blanche* privilege of doing what the doctor himself has no right to do."

Dr. Oliver presented a Code of Ethics of the Pharmaceutical Association of Erie County, New York, and read a few articles from the same, showing that they discountenance the sale of nostrums, the giving of percentage on prescriptions, prescribing over the counter, or giving medical advice to patients.

Prof. Remington said the Philadelphia College of Pharmacy had had a Code of Ethics for the past twenty-five years; the College cannot control the graduates after leaving the school, as they scatter themselves all over the country.

Dr. Swayze said he understood the College had a Code of Ethics, but did not understand that it presented any definite restrictions against the practice of the abuses complained of, and read again from the printed appeal, that what was asked for was the adoption of "*a Medical and Pharmaceutical Code for our mutual observance, by which the legitimate province of pharmacy and the professional rights of physicians shall be secured.*"

Dr. Oliver said if the College of Pharmacy has a code of ethics it has been a dead letter for many years. He wanted a mutual code for pharmacists and physicians, if we could agree upon one.

Dr. Butcher thought we had better reason together, for the benefit of both physician and pharmacist.

The question of renewing prescriptions was now taken up.

Mr. Webb thinks the abuse of the renewal of prescriptions is not so great as many of us think.

Dr. Crandall said several of the members of our Society had informed him that their prescriptions had been renewed very many times without any authority from the physician, and by these renewals the doctors were deprived of receiving fees that they were justly entitled to.

Prof. Remington asked the physicians present if they had tried the experiment of asking pharmacists not to renew their prescriptions?

Mr. Thompson said that the physicians should tell their patients that the prescription is not to be renewed, and not put the burden upon the pharmacist to do so. By this means they would educate their patients in the matter.

Mr. Blair said he had often been placed in an awkward position by having a physician tell him not to renew any of his prescriptions without a written order from the physician, and yet, perhaps in a few days, a perfectly reliable patient would come and tell him that the doctor told him to come and get the prescription renewed.

Dr. Prall asked if a good effect could not be produced if the pharmacist would paste a small label on the bottle, stating that the prescription should not be renewed?

Prof. Remington thought an excellent effect would be produced by this procedure, if the doctor's initials were used in connection with the above suggestion.

Mr. Blair thought the pharmacist had enough to do now, without having extra labor put upon him for which he would receive no pay. As the physician generally saw his patient in a place more quiet than the apothecary store, he thought it was the physician's place to inform the patient that the prescription was not to be renewed.

Mr. Bullock said we must remember that the public stand between the physician and the pharmacist, and they assert we cannot stop them from the privilege of having prescriptions renewed. But he thought the physician should educate the patient up to the point that it is unsafe to take medicine without the physician's orders.

Dr. Prall asked, what will druggists do if they get prescriptions containing calomel? His friend, Dr. Somers, wrote a prescription with calomel in it, and it cured a very sick child. The family were pleased, and retained the box containing the powders, with a view of having them renewed for any other sickness in the future. Another child was taken sick, and without consulting the doctor they renewed and used the powders, and continued to use them for a long time; the child was salivated and finally died. The family censured the doctor, and never employed him afterward, although he did not order or know they were using the medicine for the child.

Mr. Boring said many pharmacists, before renewing a prescription, ask whether the doctor has ordered it to be renewed.

Mr. Bullock said many patients have had the prescriptions of Dr. Physic and other old physicians put up, even to this day, and that no one can deprive them of the right to have any prescription compounded as often as they wish. Still, he would like to see the matter settled to the satisfaction of the physicians.

Prof. Remington said no law can stop a patient from salivating himself, if he wishes to. We pharmacists keep *open shops*, and sell whatever is called for. Still, we are as careful of the lives of patients as the physicians are. He mentioned that Dr. Henry M. Smith had printed, in red letters, on the top of his prescription blanks, a request *not to renew his prescription.* In one instance, on refusing to renew such a prescription, the patient required me to give him a copy of the prescription, and he went to the next pharmacist and had it put up. He said these meetings will accomplish some good, as it gives a chance to hear both sides of the question.

Dr. Oliver asked if any respectable pharmacist would put up a prescription unless it was by the orders of a physician? and whether they did not in all cases write the name of the doctor on the label, ordering the medicine to be taken in a certain manner? Now, can any pharmacist who renews a prescription without an order from the doctor conscientiously say, "*Take as ordered by the physician,*" when the doctor has no knowledge of the patient having had it renewed? He thought all respectable pharmacists, if the doctor would make the request, would not renew the prescription, but would honor his request.

Dr. Prall said the most practicable way of rectifying the difficulty is by a mutual code of ethics between the doctors and druggists. The druggists can then all the time discourage renewals, as a duty, especially when the ingredients are injurious if taken for a considerable length of time, and thus gradually educate the people.

Mr. Thompson replied that his idea of a Code was that it was *all bosh*—made *to-day* and broken *to-morrow.*

Dr. Butcher said it was in consequence of pecuniary losses to physicians that they object to the miscellaneous renewals of their prescriptions. It is an injustice to us to have such constant renewals. The druggists can easily say they cannot renew, and the public will not demand renewals. The "dear public" is here thrust in. There is a great concern about the rights of the "dear public." I'm as much a friend to the "dear public" as anybody, but I'm a friend to my own rights also.

Mr. Bullock said he thought physicians should try making a request on their prescriptions first, and all good pharmacists would, he thought, try to honor the request. We can see what this will accomplish if the physicians adopt it.

Mr. Davis asked that physicians write the request with their initials attached, to give the druggist something to stand behind as a special order. No druggist of character would renew a gonorrhœal, or similar mixture, without an order to do so.

Mr. Blair offered the following resolution:

*Resolved*, That physicians, when writing a prescription which they do not wish renewed, should write on the bottom of such prescription, "Do not renew," and also inform the patient of the fact in every case.

Mr. Mitchell thinks that the *written* request will prove an important feature in restricting the druggist.

Dr. Butcher offered an amendment to Mr. Blair's resolution, as follows: "And, on the other hand, the druggist will either write or print on the label upon the bottle or package, '*Not to be renewed unless by a written order of the doctor.*'"

The resolution, with its amendment, was adopted.

Dr. Buckley thinks we must at last come to a mutual Code—a house whose roof would be ample enough to protect us all.

On motion the meeting adjourned to meet on Friday, October 8th, at half-past 3 P. M.

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TANNIC ACID.—A new and beautiful form of tannin is now being produced in Germany. It is made by allowing a syrupy ethereal solution of tannic acid to drop from a perforated vessel through a warm atmosphere, for a distance of about sixteen feet, onto a rapidly revolving cylinder, from which it is removed in the shape of fine threads, presenting a pseudo-crystalline appearance.

# QUANTITATIVE ESTIMATION OF ALKALOIDS CONTAINED IN WINE OF CALISAYA.*

BY DR. C. SCHACHT, BERLIN.

Dilute 100 grams wine of calisaya with twice its volume of water, precipitate the mixture with 150 grams of a cold saturated solution of picric acid. After the voluminous precipitate has subsided, collect on a filter. If the filtered liquid should not be clear and transparent, return to the filter and allow to pass through a second time. Wash the precipitate until free from all trace of the precipitant. Pour aqua ammonia over the precipitate. With the assistance of a feather remove as much as possible of the same from the filter. Perforate the filter, wash it off by the use of a wash bottle, and finally wash the same with absolute alcohol, in order to remove all remaining trace of the precipitate. Pour the precipitate—part dissolved and part held in suspension—into a cylindrical glass, with a capacity of about 100 c. c. (10 c. c. high and 4. c. c. in diameter), supplied with a glass stopper, until the cylinder is about half filled, after which agitate it repeatedly with a like volume of an alcoholic solution of chloroform (5—15). The well-agitated liquid will upon standing rapidly separate into two layers, the under layer of a greenish yellow appearance, the upper of a dark reddish brown. With the assistance of a 50 c. c. pipette, carefully remove the lower stratum. Place it in a small retort. Using the pipette as a funnel, allow an equal volume of fresh alcoholic solution of chloroform to flow into the cylindrical c. c. glass; shake this repeatedly and again repeat the same operation. With a separation funnel separate the last portion of the chloroformic layer from the aqueous solution and add to the contents of the retort. Distill off the chloroform; to the residuum add a small quantity of water, and about ten (10) drops of officinal acid sulph. dil. Heat the solution until the chloroform has been completely removed; after cooling filter the acid solution and precipitate the greater portion of the coloring matter with aq. ammonia, after which filter the solution and add sufficient sodium hydrate to precipitate all the alkaloids. Place the precipitate on a filter previously dried and weighed at 120° C.; after washing the precipitate, allow to drain, dry carefully at the same temperature as above and weigh.

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* Translated by James Casey.

Upon examination, should traces of alkaloids still remain in the mother liquid, or washings, by evaporation concentrate the same to one-fourth its volume; shake the aqueous solution repeatedly with sulphuric ether, separate the ether, place in a previously tared evaporating dish, allow to evaporate spontaneously, and ascertain the amount of alkaloids by again weighing.

This method of examination excludes all possibility of the result of the analysis being influenced through the prolonged exposure of the alkaloids to heat, aqueous, acid or alkaline solutions, and renders the quantitative estimation of alkaloids in wine of calisaya in a few hours easy and practicable. The resulting alkaloids obtained by this method are always more or less slightly colored. To remove the last traces of coloring matter seems to be almost impossible.—*Pharm. Centralh.*

## PHARMACY IN TURKEY.

In September last an account of the formation of the Society of Pharmacy of Constantinople appeared in the *Chemist and Druggist.* Through the courtesy of M. Zanni we are now able to give an abstract of the laws which regulate the practice of pharmacy in Turkey.

Military pharmacy and medicine seem to have first obtained the attention of the authorities, as the Ecole Imperiale de Medicine is subordinated to the Minister of War. The Directorate of this School, by a special decree, is *ex-officio* the Medical Council, which regulates the practice of medicine and pharmacy by civilians. This Medical Council consists of president and secretary and eight members, six doctors of medicine, and two "pharmacien chimistes." The medical members are required to meet twice weekly, the pharmacists to join them once a fortnight. If a member absents himself three times in succession, except from illness, steps are immediately taken to replace him. Each receives a Turkish pound (18*s*.) for every attendence.

Medical practitioners in Turkey must be provided with the diploma of the Imperial Faculty of Medicine of Constantinople, or of some foreign faculty. Foreign doctors must register their diploma, submit to a word-of-mouth examination, and pay 500 piastres (£4 to £5).

Doctors or surgeons may not supply medicines unless there is no pharmacist in their neighborhood. Midwives are registered, but are not allowed to use the forceps or to administer ergot or any other active drug. A list of all registered medical practitioners is published annually in all the journals of the capital, and is sent to every pharmacist.

Civilian pharmacists, unless they kept open shop before March 23, 1860, must possess the diploma of Master in Pharmacy of the Imperial School of Medicine or of some European university. To obtain this diploma the pharmacist must have been registered at the school as a civilian assistant, and must have served for six years in an authorized shop. At the beginning of the fourth year he must pass an examination in French and arithmetic, and must subsequently attend the course of pharmacy at the Imperial School of Medicine. At the end of six years he may pass the examinations decreed by the Medical Council, and receive his diploma of Master of Pharmacy on payment of 500 piastres. An assistant cannot leave his master without giving fifteen days' notice, and receiving a *certificat de conge*, and he must not accept a situation within 1,001 pics (nearly 800 yards) of his former master without special permission, and for three years he may not set up in business within the same limits.

The number of pharmacies in Turkey is unlimited, and the Master in Pharmacy obtains permission to open a fresh shop or to commence business on paying 500 piastres to the Imperial School. None but qualified men can open pharmacies, and no one may own more than one business, or allow others to conduct business under his name. All pharmacies must contain certain drugs enumerated in a list published by the "Direction des Affaires Medicales." Poisons must be kept in a locked cupboard. The pharmacist must not retail any *active* drug, nor especially any poisonous drug, without a prescription. Poisons may be sold wholesale to persons of known good character, who give a written declaration of their intended use. Prescriptions must be copied and returned to the patient. They may only be dispensed when signed by some practitioner whose name is on the official list. Medicines for internal use should have white, those for external use orange labels.

Twice a year the pharmacy is inspected by the delegates from the School of Medicine, who are paid 9*s*. by the pharmacist. In case of any flagrant impurity in the medicines, or other gross offense, the delegates are empowered to seize the shop. Within three days they must make a report to the Directorate of the Imperial School, which will take action on the matter. The penalties for such offenses vary from seizure of the offending goods, a fine of 50 Turkish pounds, closing the shop for three months at most, suspension for not more than two years, or forever, of the right to practice pharmacy.

All practice of medicine by pharmacists, and all illicit arrangements with physicians for the purpose of "exploiting" patients, are strictly forbidden. Only those secret medicines may be sold which have been approved by the School of Medicine.

From this it appears that, so far as legislation goes, our Turkish brethren have reached an almost idyllic state. But complaints of inertness of the executive body are rife there as here. Petty druggists sell all common medicines with impunity. The regulations of the Medical Council are systematically infringed without exciting its resentment; its members, we may remark, are paid for attendance, not for attention.—*Chemist and Druggist.*

## ON PTOMAINES.

When cadaveric decomposition takes place, certain alkaline substances are formed, which are named *ptomaines*, from the Greek *ptoma*, a cadaver or corpse. As they are liable to be mistaken for vegetable alkaloids, such as strychnia, veratria or nicotia, their study presents the deepest interest, especially in a medico-legal point of view.

Messrs. Brouardel and Boutmy have recently investigated the question, and, in a paper read before the Scientific Congress of Rheims, throw considerable light on a hitherto obscure and disputed point. The research cannot be said to be complete and final, but great progress is made in an unexplored direction.

The existence of ptomaines has been denied by some, but the writers of the paper affirm that they do exist, and, to prove it, demonstrate the presence of ptomaines both in the viscera of persons whose death was not due to poisoning and in those who died from poison. From a number of cases described by Messrs. Brouardel and Boutmy we only quote the following:

*a.* The internal organs of a person asphyxiated by charcoal fumes were analyzed a few hours after death, and found free from poison. Eight days later the same viscera were examined and proved to contain a solid organic base, presenting the general characteristics of alkaloids, and toxic enough to kill, even in small doses, frogs and guinea pigs. This shows that putrefaction gives rise to organic alkaloids when no poisoning has taken place.

*b.* In this case the authors found a venomous ptomaine in a subject poisoned by arsenious acid, thereby agreeing with Professor Selmi, of Bologna, who, in 1873, met with the same ptomaine in two subjects also poisoned by arsenic. Hence it is seen that ptomaines will form as well in subjects who come to their death without poison as in those who died from the ingestion of a poison, like arsenic, possessing strong antiseptic properties.

The importance of ptomaines in a medico-legal examination, is appreciated at once, as well as the interest presented by the study of their mode of formation, nature and composition. In criminal cases, it is equally important to know by what means the production of these substances can be prevented during the time elapsing between the autopsy and the chemical analysis of the viscera.

The following are the first results arrived at: In general properties ptomaines are similar to alkaloids, and most of the time their toxic action is no less powerful than that of the most deadly poisons.

There are several distinct kinds of ptomaines, completely differing in chemical and physiological character.

To speak only of one aspect of the question, certain ptomaines are violent poisons, while others are not toxic. In a general way it may be said that they are venomous six times out of ten.

Each case of putrefaction does not appear to give rise to distinct ptomaines, for the same alkaloid has been found in the bodies of persons who had died from totally different causes. For instance, the same ptomaine was discovered in a subject asphyxiated by charcoal fumes and another poisoned by prussic acid.

Ptomaines are in most cases volatile, yet they are fixed occasionally. Once, for example, a ptomaine analogous to veratria was found in a body which had been eighteen months in the Seine, and another was discovered in a goose that had undergone the heat necessary for coction.

Certain ptomaines have a toxic effect on man. In an instance quoted, twelve persons who had eaten a tainted goose, containing an alkaloid resembling conia, offered all the symptoms of dangerous poisoning. One of them even died in a few hours, after copious vomitings, although no other cause of death but the presence of ptomaine could be detected. Hence it may be concluded that ptomaines can cause the death of man as well as of animals—as they are known to do. Much time is not necessary for the formation of these alkaloids, for the goose above mentioned had been bought at the market on the very morning of the poisoning accident, and had passed the regulation inspection.

Against the formation of ptomaines, the authors recommend refrigeration as the most efficacious preventive. At the time their paper was written, rooms at the Morgue were being arranged to be kept cool with ice-cold air. In these the bodies awaiting a medico-legal examination can be preserved without danger of alteration.

It will be remembered that a short time since Dr. Brouardel acted in his official capacity at the sudden decease in Paris of an English actress well known in this country. The hasty removal of the body to the Morgue was not a little criticised at the time, but the present paper explains his action on that occasion. The death occurred under such circumstances as to raise suspicions of poisoning, and in very warm weather. For these reasons it was probably decided to immediately refrigerate the remains, so as to prevent the formation of the deceitful ptomaines. The subsequent examination proved that death was due to natural causes. But had not this precaution been taken, and had poisonous alkaloids been found in the body, the companions of the deceased lady would have been in a position extremely unpleasant, if not dangerous.

Such are the first results of the investigations of Messrs. Brouardel and Boutmy in an entirely new field. Further researches, it is hoped, will enable them to solve the difficult questions which the discovery of ptomaines raises in medico-legal examinations.—*The Druggists Circular and Chemical Gazette.*

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EASY TEST FOR ARSENIC IN FABRICS.—Immerse the suspected paper in strong ammonia, on a white plate or saucer; if the ammonia becomes blue, the presence of a salt of copper is proved; then drop a crystal of nitrate of silver into the blue liquid, and if any arsenic be present the crystal will become coated with yellow arseniate of silver, which will disappear on stirring.—*Practitioner.*

## FORMULAS

Recommended for the new Pharmacopœia by the Pennsylvania Pharmaceutical Association.

### EXTRACTUM RHEI. AROMATICUM FLUIDUM.

| | |
|---|---|
| Rhubarb (in moderately fine powder) | 6 ounces. |
| Cloves (in moderately fine powder) | 2½ ounces. |
| Cinnamon (in fine powder) | 2½ ounces. |
| Nutmeg (in fine powder) | ¾ ounce. |
| Stronger alcohol | 6 ounces. |
| Water | 6 ounces. |
| Glycerin | 5 ounces. |

Make according to general formula, page 151. One ounce of this fluid extract and fifteen fluid ounces of syrup will make one pint of aromatic syrup of rhubarb.

### EXTRACTUM STILLINGIÆ COMPOSITUM FLUIDUM.

| | | |
|---|---|---|
| Queen's root | 4 oz., | parts, 4 |
| Turkey corn root | 4 oz., | parts, 4 |
| Blue flag root | 2 oz., | parts, 2 |
| Elder flowers | 2 oz., | parts, 2 |
| Pipsissewa leaves | 2 oz., | parts, 2 |
| Coriander | 1 oz., | parts, 1 |
| Prickly ash berries | 1 oz., | parts, 1 |

(All in moderately fine powder.)

| | |
|---|---|
| Stronger alcohol | parts, 8 |
| Glycerin | parts, 4 |
| Water | parts, 5 |

Proceed as on page 151 of present Pharmacopœia. Four fluid ounces of this extract and twelve fluid ounces of simple syrup will make one pint of compound syrup of stillingia.

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**Hard on Liebig's Extract of Beef.**—Dogs fed exclusively upon Liebig's extract were found to die sooner than dogs not fed at all. This has been accounted for as due to the deleterious influence of the potash salts of the extract; for although these are indispensable to the economy, a large dose of them is injurious in the absence of the food whose metabolism it is their office to direct.—*Lancet.*

# NOTES ON BISMUTH SUBNITRATE.*

BY HENRY LEFFMANN, M. D.

Recently I had occasion to examine the stomach of a woman supposed to have died from poison, and who had taken during her last illness several doses of bismuth subnitrate. A quantity of it remained in the stomach, and, upon making a microscopical examination, I was much surprised to find the entire mass made up of well-defined crystals. I had never studied the physical condition of this remedy, but had always taken for granted that such an insoluble substance would be Its method of preparation and irregularity of composition would also used only in the form of an impalpable, or, at least, amorphous powder. be in favor of this view. A similar opinion was entertained by several physicians and pharmacists of my acquaintance. Most of the books either leave the physical condition undescribed or speak of it as pulverulent. Taylor (On Poison) especially calls it "uncrystalline." The United States Dispensatory speaks of it as being in "minute crystalline scales," which hardly describes the condition.

To pursue the matter, I obtained samples from various places, and discovered that one of the large manufacturing firms in the city furnishes regularly a crystalline preparation, another firm furnishes an amorphous powder. The crystals vary sometimes in size, but those of the most abundant variety are about $\frac{1}{500}$ of an inch long and $\frac{1}{1000}$ of an inch wide. I consider this observation of some importance, in view of the fact that the solution and absorption of such powders must be greatly facilitated by fine divisions; and even if we adhere to the view that bismuth subnitrate acts mechanically by spreading over the mucous membrane, it would seem that a smooth and impalpable powder would answer best.

In this connection it may not be amiss to remark that, from experiments made in the course of another investigation, I have found that the homœopathic triturations of arsenic brings that medicine to a mechanical condition in which it is much more easily mixable with liquids than when in its ordinary state.

I have brought with me this evening this specimen, which is a portion of the bismuth subnitrate found in the stomach. You will notice that the finer particles have been dissolved or washed away, and that we have a coarse crystalline powder. The dark color is, in all probability, due to the formation of bismuth sulphide from the gases of decomposition.

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* Read before the Philadelphia County Medical Society, June 9th, 1880.

I display, also, by means of microscopes, two slides, bearing, respectively, crystalline commercial subnitrate, amorphous commercial subnitrate. I have made a number of experiments with a view of ascertaining the chemical conditions under which the two forms of the precipitate are produced, but have not yet reached any definite result.—*Phila. Med. Times.*

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## ELIXIR CHLOROFORMI COMPOSITUS.

Dr. W. F. McNutt, Professor of Principles and Practice of Medicine, University of California, says, in the *Western Lancet* for August:

I have been in the habit for several years of prescribing Collis Browne's chlorodyne in certain cases of asthma, colic, diarrhœa, neuralgia, rheumatism, hysteria, etc. It has seldom failed to be of some benefit, and often acted like a charm; in fact, I found it a most excellent and reliable anodyne, anti-spasmodic and sedative.

On account of several objections to its use, I have, after a great deal of experimentation, adopted the following formula as a substitute for chlorodyne, viz.:

| | | |
|---|---|---|
| ℞ | Morph. mur. | gr. ss. |
| | Chloral hyd. | aa ʒ ss. |
| | Chloroform | |
| | Tinct. cinnab. ind. | aa ♏xx. |
| | Tinct. capsici. | |
| | Acid hydrocyan. dil. | |
| | Spts. menth. pip. | ♏x. |
| | Syr. sassafras co. | ad ℥j. |

Dose, one drachm.

This I have named elixir chloroformi compositus, and can heartily recommend it to those who have been in the habit of using chlorodyne. To those who have never used chlorodyne I may say that they will find elixir chloroformi compositus a most efficient remedy for many purposes and under many circumstances; for instance, in whooping cough, asthma, emphysema, cough of many phthisical patients, in many cases of hysteria, and especially in many cases of dysmenorrhœa, it certainly has no equal. Given as an anodyne, it seldom produces headache or disturbance of the digestion, as does morphine, or depresses the heart's action, as does hydrate of chloral. In diarrhœa accompanied with cramping pains and tormina, in teaspoonful doses, repeated every two or three hours, it generally acts quickly and satisfactorily.

In many cases of diarrhœa in children a few drops of the elixir, together with a few drops of castor oil and wine of ipecac., in syrup of acacia, make a most efficient remedy.

The objections to chlorodyne are—

1. It is very expensive in this country.
2. It is not a perfect mixture, as it separates.
3. It is too concentrated to be safe for general use.
4. And principally it is a patent medicine, the exact formula for which is unknown.

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## PRUSSIC ACID AND A NEW ALKALOID IN TOBACCO SMOKE.

1. The principles of tobacco smoke, which are condensed by cooling in the mouth or lungs or in the apparatus destined to collect them, cantain nicotine, carbonate of ammonia, various tarry matters, coloring substances, prussic acid combined with bases, and very odorous and very poisonous aromatic principles (*Medical Times and Gazette*). In the smoke these various substances are found mixed with a large proportion of the vapor of water and of various gaseous compounds, principally the oxide of carbon and carbonic acid.

2. The liquid resulting from the condensation of the preceding substance is endowed with extremely poisonous properties. It suffices to inject very small quantities into the circulatory system of an animal, or cause it to be respired for some time, to induce death, after the exhibition of various signs of paralysis.

3. The properties of tobacco smoke, which up to the present time have been attributed solely to nicotine, are also due to prussic acid and to various aromatic principles, especially an alkaloid, *collidine.* This is a liquid body of an agreeable and very penetrating odor, the presence

of which had been exhibited in the distillation of various organic matters, but the physiological properties of which were entirely unknown. It contributes in great part to giving its odor to tobacco smoke, and so penetrating is its perfume that but a single drop suffices to impart a very strong odor to a large quantity of water.

4. Collidine is an alkaloid as poisonous as nicotine. The twentieth part of a drop kills a frog rapidly, producing symptoms of paralysis. Only a few instants' breathing, it induces muscular debility and vertigo.

5. It is to the presence of prussic acid and the various aromatic principles that several phenomena are due, such as vertigo, pain in the head, and nausea, which are produced by certain tobaccos either poor in nicotine or destitute of it, while other tobaccos rich in nicotine do not produce any analogous effects.

6. The proportion of prussic acid and aromatic principles contained in tobacco smoke varies in different tobaccos, those of Havana and the Levant containing the strongest doses.

7. The black semi-fluid matter which condenses in the interior of pipes and cigar-holders contains all the substances enumerated, and especially large quantities of nicotine. It is extraordinarily poisonous, two or three drops sufficing to kill an animal of small size.

8. The combustion of tobacco destroys only a small part of the nicotine which it contains, so that this is found in great part in the the smoke. The proportion susceptible of being absorbed by smokers, and which we have determined in our experiments, varies according to the conditions in which these latter are placed. It is scarcely ever less than fifty centigrams in each hundred grams of tobacco smoked. The quantity of ammonia absorbed at the same time is about equal.

9. Of the different modes of smoking, that in which the amount of nicotine and the various other principles absorbed is greatest is in smoking so that the smoke is *respired;* that in which the proportion is least is smoking the narghal or pipe with a long tube in the open air without respiring the smoke.

10. Nicotine kills animals instantly in doses of two or three drops, but in infinitely smaller doses it causes paralysis and death. A rog introduced into a vessel containing an aqueous solution of nicotine at $\frac{1}{100000}$, or about one drop to a liter of water, succumbs in some hours. The same occurs if the frog be placed under a funnel containing a

single drop of nicotine in a roll of cotton wool. The vapor disengaged from nicotine while boiling kills animals instantly, without leaving them time to move.

11. Tobacco smoke contains about eight liters of oxide of carbon per hundred grams of tobacco burned. Our experiments prove that it is not to the gas that it owes its poisonous properties.

12. Among the most certain effects which the smoke of tobacco determines in the long run in man may be mentioned *visual* disturbances, *palpitations*, tendency to *vertigo*, and especially *diminution of memory*.—*Journal de Therapeutique.*

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## COAL OIL POISONING.

BY W. J. MOSS, M. D.

On the evening of the 20th of August I was hastily called to a child of thirteen months, who had swallowed some coal oil. I saw the case in less than ten minutes after the oil had been swallowed, and upon inquiry I learned that the mother had left a tin lamp, containing six or eight ounces of oil, upon the table, when the child, taking advantage of the temporary absence of the mother from the room, helped itself, drinking three or four ounces. When the mother re-entered she found it drinking, coughing and strangling. I found the patient in a cold sweat, muscular system perfectly relaxed, pulse frequent and feeble, respiration labored, and, although already quite stupid, was evidently suffering considerably. I gave an emetic, and repeated it several times before emesis was produced, and also applied warmth to the extremities. In an hour after drinking the oil it was in a state of profound coma, and about this time the skin became very dry and hot, the pulse full and bounding, and all efforts to rouse it were ineffectual. It lay in this condition eighteen or twenty hours, when it awoke perfectly well. I do not pretend to say that without interference it would have been followed by death, but the symptoms were alarming, to say the least of it.

PROVIDENCE, MISS.—*Louisville Medical News.*

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R. R. R.—Radway's Ready Relief is made of eight parts of tinct. saponis, one tinot. capsici and one of aq. ammoniæ.—*Gaillard's Med. Jour.*

# ORGANIC MATTER IN RUNNING WATER.

On one point chemists agree, viz.: that organic matter tends to be eliminated from running water. But when it comes to the question, how long does the process last, there is a wide diffierence of opinion. At the late meeting of the Association fòr the Advancement of Science a paper was read showing that the organic matter of a peaty water was rapidly oxidized in a mountain stream. Here, however, the conditions were unusually favorable. The rapid fall and the consequent agitation of the water tended to bring the organic particles into intimate and frequent contact with the air. It is evident that in a slowly moving stream the oxidation would take place much more slowly.

Tidy, in his paper on "River Water," (*English Chem. Soc. Journal*,) says that organic matter is rapidly oxidized in running water. He says the waters of Shannon lose more than thirty-eight per cent. of their organic matter during a flow of one mile. He also instances a stream in the morth of England which loses fifty per cent. of its organic matter in a flow of four miles. Dr. Frankland, in a recent communication to the Chemical Society, the joint work of himself and Miss Lucy Halcrow, denies that water strongly impregnated with peaty and other organic substances is so rapidly purified. A sample of peaty water kept for seventy days in contact with air, and freely exposed to the sunlight, but without shaking, lost only six per cent. of its organic elements. When the water was violently shaken the results were but little more satisfactory. The conclusion arrived at by the investigators is that peaty matter is oxidized with extreme slowness, and in no case in such amounts as the report of Tidy seemed to show. In the discussion which followed, particular attention was given to the question, "Can running water be safely used for dietetic purposes a few hours or days ofter it has been mixed with sewage?" In discussing this question, Dr. Frankland took strong grounds against the theory of oxidation. He said no river in the United Kingdom was long enough to effect the complete destruction of sewage filtration. On the other hand, Dr. Tidy asserted that the experimental proof was good of the rapid oxidation of organic matter.

Fortunately in this country our rivers are longer than in England, and hence there is a much better chance to secure the destruction of organic matter. It is also not often necessary that one town should draw its water supply from a stream which has but lately received the sewage of another. But the above facts should at least make us more careful about the sources of water supply in large cities. We may safely adopt a mean of the two extremes stated above, and, while we admit the probability of sewage contamination, let us not deny the possibility of sewage elimination by atmospheric means. It is possible that the citizens of Peoria may not be altogether wrong when they say that the Illinois river at that point is still foul with the filth of Chicago; but the Peorians should remember that it is much more likely to be foul from the sewage of Peoria.—*Chicago Medical Review.*

## THE ENGLISH PHARMACY ACT PRACTICALLY NULLIFIED.

"Both sides took the act to pieces, and proved their opposite inferences from the same premises. The respondents said: Look at all those clauses about undergoing examination, being of full age, leaving widows, and so forth. Is it not evident that corporations never were thought of, and that this act cannot in any sense apply to them? No, said the appellants; those very clauses prove clearly that corporations cannot keep chemists' shops. If a man or a corporation says, I cannot pass the examination, the reply is very obvious: Very well, then, you cannot be a chemist and druggist. But, says the court, if the Legislature really did intend to prohibit anything like joint-stock trading in poisons, they should have said so in express terms."

"What remains of that act since this decision is so insignificant, as far as legal effect is concerned, and is open to such an immense array of quibbling, thanks to the ingenuity of the six learned judges who have devoted their abilities to its dissection, that it seems to us, failing the chance of rehabilitating it by improved legislation, chemists can hardly do better than unanimously petition Parliament for its total repeal. It may still be used probably as a terror to a dozen hucksters per annum, but powerful offenders against its spirit may as well in future use their copies of the act to wrap up butter, for any necessity there will be for them to refer again to its provisions."—*Chemist and Druggist.*

## NOTES AND ABSTRACTS FROM VARIOUS SOURCES.

ESTIMATION OF THEIN.—The following process (Patronillard, in *Schweiz. Wochenschr. f. Pharm.*) is simple and effective, and greatly shortens the ordinary manner of estimating thein. Fifteen grams of tea are repeatedly and slowly extracted with boiling water until completely exhausted. The filtered liquids are evaporated almost to dryness, and then treated with 2 gr. of magnesia alba and 5 gr. of finely broken glass. The whole is now evaporated to dryness. The finely pulverized residue is treated with 60 c.c. of ether three or four times. The ether is then distilled off, or better, left to spontaneous evaporation. By the latter process the thein is obtained in a crystalline state. The crystals are taken up with a little chloroform, which dissolves them readily. It is then transferred to a weighed dish and slowly evaporated to dryness. The increase in weight of the dish gives the weight of the thein directly. Care must be taken not to use too little ether, since thein is only slightly soluble in this reagent.—*Chicago Medical Review.*

QUININE PRODUCTION IN INDIA.—The *Pall Mall Gazette* says that the experiments begun ten or twelve years ago for naturalizing in certain parts of India the best varieties of the cinchona or Peruvian bark tree have been attended with the most remarkable success, and with beneficial effects still more remarkable (*British Med. Journal*). In the treatment of the fevers and other forms of disease endemic in India, the employment of quinine has always been a chief means of cure and of prevention. But the increasing demand has raised the cost of the imported drug to a point which renders its use impossible to millions and tens of millions of the poorer classes of India. Hence it occurs to a few of the more enterprising spirits in the India Government that vigorous efforts should be made to acclimatize the cinchona tree itself in certain districts of India and in Ceylon. The experiments have been entirely successful, and there are now in various stages of growth probably millions of cinchona plants already yielding the Peruvian bark so plentifully and so perfectly that the price of quinine has fallen in Ceylon and other parts to about two rupees (three shillings and six pence) the ounce, and to fifty cents the ounce for preparations of a diluted strength. There is the strongest possibility, amounting to certainty, that in six or seven years the Indian production of quinine will be so large, and the price so low, that it will become a considerable article of export; bearing in mind that every fall in price means extending use in India in the cure and prevention of fever and disease, and therefore the cure and prevention of want and suffering among the poorest class of the native population.—*Louisville Medical News.*

ERYTHROXYLON COCA IN THE OPIUM AND ALCOHOL HABITS.—Dr. Bentley reports in the *Therapeutic Gazette* eleven cases of the opium habit. All but one were cured by the use of a pound or two of erythroxylon coca. Three cases of inebriety were also said to be cured. The drug is given in dram doses of the fluid extract, increased if necessary and repeated till some relief from the morbid desire is felt.—*Medical Record.*

THE Pennsylvania Pharmaceutical Association recommend that the following drugs be dismissed from the Pharmacopœia: Acetum, angustura, allium et syrupus allii, aralia nudicaulis, asclepias incarnata, asclepias syriaca, aurantii flores, avenæ farina, canna, cannabis americana and extract of the same, carota, cascarilla, cassia marilandica, cotula, diospyros, dracontium, euphorbia corollata, euphorbia ipecacuanha, fermentum, gentiana catesbæi, geum, hordeum, maranta, marmor (if liq. calc. chlor. be dropped), mel rosæ, mel sodii boratis, os, panax, polygala rubella, prinos, ranunculus, rubia, rubus, ruta and oleum rutæ, sabadilla, sago, statice, tapioca, testa and testa preparata, triosteum, uva passa, viola.

They also recommend the rejection of the following extracts, for the reason that the succus is not readily obtainable, viz.: Extractum belladonnæ, extractum cannabis americanæ, extractum conii, extractum hyoscyami, extractum stramonii seminis.

They also recommend the following crude drugs for officinal recognition, viz.: Baptisia tinctoria, coca, corydalis formosa, frangula (rhamnus), galanga, grindelia. (No specification of squarrosa, robusta, etc., but only a description under the general head of grindelia, on account of the many varieties.) Guarana, pilocarpus, viburnum prunifolium.

We would also respectfully recommend the following chemicals for adoption: Acidum salicylicum, æther aceticus, bismuthi et ammonii citras, calcii hypophosphis, cinchonæ sulphas, cinchonidiæ sulphas, chloral hydrate *crystallized*, instead of the mass, as now recommended, paraffinum, piperina, ferri valerianas, potassii hypophosphis, salicin, sodii arsenias, sodii bisulphis, sodii bromidum, sodii hypophosphis, sodii iodidum, sodii salicylas, sodii sulphocarbolas, thymol, zinci bromidum, zinci iodidum, zinci phosphidum, zinci sulphocarbolas.

TOXIC SYMPTOMS AFTER USING A WEAK SOLUTION OF ATROPINE.—William J——, aged fifty-nine, of Hunslet, had an iridectomy performed on the left eye twelve years ago, as a preliminary to the extraction of a cataract. In the interval between the two operations he attended as an out-patient, and was ordered a solution of atropine containing two grains to the ounce. After he had placed drops of the solution in the eye three times, he felt giddy and sick. The sound pupil was largely dilated; violent vomiting came on; the pulse became feeble and small, and the extremities cold. There were dimness of sight and vertigo, but no delirium, and on visiting him he was found in a state of complete collapse. He was wrapped up in hot blankets, and stimulants were administered, but he did not recover from the effects of the atropine until three days after the symptoms first appeared.—*London Lancet.*

EXPERIMENTAL TRANSFORMATION OF A LIVING ORGANISM.—The bulletins of the Academy of Science at Munich contain a report of a discovery which has the highest interest for the theory of evolution, and will perhaps be also of practical value. Hans Büchner, well known as a skillful experimenter, has succeeded in transforming a microscopical kind of fungi which is a dangerous agent of disease into another kind of fungi which is perfectly harmless. He reached this result by a continuous treatment of the fungi for the space of six months, and by producing 1,500 generations. In this manner he was able to transform those bacteria that cause "milzbrand" (the dreaded inflammation of the spleen), into the so-called "heupilze" (fungi of hay), which are harmless, and *vice versa*. And even more, he produced an organism that forms a connecting link between the above-named fungi, and which was hitherto unknown. To give a detailed description of the experiment would take too long. We only mention two facts, which will show with what organisms the experiment was made. The hay fungi, such as can be produced in an infusion of hay have such an enormous vitality that their life cannot be destroyed even by boiling the liquid which contains them for hours, and each of these little beings is able to propagate itself and to produce ten generations per day.—*Scientific American.*

NUMBER OF CHEMICAL COMPOUNDS POSSIBLE.—The eminent chemist, Bertholet, after making a calculation of the number of compounds derivable from certain alcohols, says: "If you give each compound a name, and then print one hundred lines on a page, and make volumes of one thousand pages, and place one million volumes in a library, you will want fourteen thousand libraries to complete your catalogue.

CHEMICAL USE OF GLUCOSE.—According to Böttger, there is no method for reducing the salts of silver so convenient and so sure as the use of glucose in alkaline solution. Take, for example, chloride of silver, freshly precipitated and well washed, suspend it in a sufficient quantity of diluted caustic soda, and add a small quantity of glucose; in a few minutes, upon boiling, the reduction takes place. The silver can be collected, washed and slightly calcined, in order to obtain the metal pure, under the form of a light sponge of a dull white. The same method furnishes an exceedingly active platinum black, and with the salts of copper it gives an oxide of a very beautiful red.—*The Druggists Circular and Chemical Gazette.*

AZOTINE.—The *Annales Industrielles* notes a new discovery by M. Heddebault, which consists in the separation of wool from cotton in rags and waste products in which these two textiles are mixed, by treating them with steam at 150° C. under a pressure of five atmospheres. Under the influence of this temperature the wool is decomposed, fuses, and flows off into a lower receptacle, while the cotton, flax, and in fact all vegetable fiber, are unattacked. It is then only necessary to pound and wash the latter to obtain products containing no longer any traces of wool, and which are admirably adapted for bleaching and manufacturing into paper. The solution of wool, evaporated to dryness, has been named by the inventor *azotine*. Owing to the increase in value of mixed cotton and woolen rags thus treated, especially for paper making, the cost of the operation is virtually covered, and the new product—*azotine*—costs really nothing. This material, which is completely soluble in water, and which contains all its nitrogen in a soluble form, is to be used, mixed with dried blood, as a fertilizer. The invention is said to be an important one, both for the paper making industry and for agriculture.—*Scientific American.*

This sounds a little Frenchy, but, if true, azotine is likely to soon figure in pills and elixirs as a fertilizer of the human organism.

CAMPHORATE OF AMMONIA.—This salt is easily produced by neutralizing camphoric acid with liq. ammonia fortior, evaporing by a very moderate heat until reduced to a syrupy liquid, and a pellicle begins to form, when it is set aside in a cool place to crystallize. It is a beautifully crystalline salt, consisting of masses of crystals, radiating from central points, arranged in the most symmetrical manner. It is a salt that has sedative properties resembling the monobromide of camphor, but, unlike that compound, it is freely soluble in water. The dose is from 5 to 10 grains.—*Pharm. Jour. and Trans.*

BILIARY SECRETION.—In the *Brit. Med. Jour.* Dr. Rutherford gives a summary of his experiments of the action of drugs on the biliary secretion of the dog. Among the most powerful he mentions podophyllin, aloes, colchicum, sanguinarin, etc. He then gives his observations on the human subject with two agents, iridin and euonymin, and says: "As yet we have found 30 centigrams of iridin, or 12 centigrams of euonymin, made into a pill with confection of roses, taken at bed-time and followed in the morning with a saline aperient, a certain remedy for biliousness," leaving no disagreeable effects except slight depression.

IODOFORM FOR CHANCRES.—"All chancres are best treated with iodoform; under its use, healthy sores heal rapidly, creeping sores generally cease to spread and sluggish ones take on healthy action." My own experience supports this statement most fully. I cannot explain the manner in which it acts, but that it does have a most remarkable effect in promoting the healing, not only of ordinary chancres, but of many other sores, I can have no possible reasonable doubt. It is what I might call a *reliable* remedy, and often saves one a deal of trouble; its effects seem almost magical. You sprinkle a little of the crystals, powdered or unpowdered, over the sore, cover this with a bit of dried lint, or vaseline spread on lint, and at your inspection next day you find that healing has progressed rapidly; the sore has filled in considerably if it is a deep one; there is but little discharge and no smell; and you have only to repeat the dressing, and so go on, from day to day, until the healing is complete.—*Practitioner.*

A CHEMIST at Deptford, England, has been fined for selling tincture of quinine in which cinchonine seems to have been substituted for a portion of the quinine. A medical neighbor was brought forward to prove that when quinine was ordered chemists always supplied cinchonine unless the quinine was specially prescribed as "*vera.*" Probably, too, they always pay their debts in counterfeit coin unless their creditors specially ask for payment in genuine money.—*The Chemist and Druggist.*

COLORS FOR SHOP WINDOWS.—A very beautiful amethystine color can be produced by dissolving five grains of salicylic acid in a little solution of ammonia, mixing this with two gallons or enough water to fill the show bottle. To this is added a few drops of solution of chloride of iron, and afterward a few drops of muriatic acid. Emerald-green color, of great beauty, can readily be produced by dissolving a few five-cent nickel pieces in equal parts of nitric acid and water, and then diluting with sufficient water.—*Pharm. Jour. and Trans.*

EMULSIONS (by A. W. Gerrard, F. C. S.).—Mr. Gerrard drew attention to the want of definite and reliable formulæ for emulsions, and undertook some experiments with the view of remedying the defect.

A large number of experiments were made with the result that powder gum acacia was found to be the best emulsifying body, answering for all substances.

The following rule as to order of mixing must be followed, as no rule of thumb practice will answer:

1st. The substance to be emulsified, if a fluid, must be measured in a perfectly dry measure and placed in a dry mortar, the necessary amount of powdered gum added and well mixed in, then add the first portion of water indicated and stir until the emulsion is complete, adding lastly the remaining ingredients.

2d. If the substance be of a solid nature and resinous, it must be dissolved in twice its volume of alcohol, then proceed as above.

3d. Syrup, tinctures and flavoring agents should be added last.—*The Chemists' Journal.*

# REVIEW OF CHICAGO DRUG MARKET.

Trade continues large and satisfactory in every department. As we predicted, quinine has declined materially, and is still tending downward. Glycerin has still further advanced. The opium syndicate in New York seems to have lost its grip, and hence opium and morphine are lower and are steadily falling. Nitrate of strontia has tumbled from 75c. to 25c. Other slight changes will be noted in the subjoined list.

| | | |
|---|---|---|
| Acid. Nitric | lb. | 12 @ 14 |
| " Tartaric | " | 54 @ 55 |
| Aloes | " | 16 @ 50 |
| Amm., Carbonate | " | 22 @ 25 |
| " Muriate | " | 14 @ 16 |
| Bleaching Powder | " | 4 @ 5 |
| Blue Vitrol | " | 9 @ 11 |
| Borax | " | 12 @ 13 |
| Camphor | " | 28 @ 30 |
| Cantharides | " | 1.25 @ 1.40 |
| Cassia | " | 24 @ 26 |
| Castile Soap | " | 8½ @ 17 |
| Chamomile Flowers | " | 30 @ 38 |
| Cinchonidia, oz. bots | oz. | 85 |
| Cloves | lb. | 45 @ 50 |
| Cream Tartar (pure) | " | 36 @ 38 |
| Cubebs | " | 30 @ 32 |
| Cuttle Fish Bone | " | 28 @ 30 |
| Ergot | " | 60 @ 70 |
| Ginger, Afr | " | 10 @ 15 |
| " Jam | " | 25 @ 30 |
| Glycerin | " | 28 @ 85 |
| Insect Po | " | 68 @ 75 |
| Iodine, Resub | " | 4.25 @ 4.50 |
| Ipecacuanha Po | " | 1.50 |
| MERCURIALS— | | |
| Blue Pill | " | 48 @ 50 |
| Calomel | " | 68 @ 70 |
| Corrosive Sub | " | 58 @ 60 |
| Mercurial Oint | " | 44 @ 50 |
| Red Precipitate | " | 78 @ 80 |
| Morphia Sul. P. & W. ⅛ | oz. | 4.50 @ 4.65 |
| Nutmegs | lb. | 1.00 |
| Oil, Anise | " | 2.35 @ 2.40 |

| | | |
|---|---|---|
| Arnica Flowers | lb. | 17 @ 20 |
| Assafœtida | " | 33 @ 35 |
| Balsam Copaiba | " | 65 @ 68 |
| " Tolu | " | 75 @ 80 |
| Bees-wax | " | 30 @ 33 |
| Oil Bergamot | " | 2.85 @ 3.00 |
| " Cassia | " | 1.25 @ 1.35 |
| " Castor | gal. | 88 @ 1.00 |
| " Lemon | lb. | 3.50 @ 3.50 |
| " Olive | gll. | 80 @ 3.50 |
| " Pennyroyal | lb. | 1.25 @ 1.30 |
| " Peppermint | " | 3.25 @ 4.00 |
| " Sperm (pure) | gll. | 1.35 @ 1.40 |
| " Wintergreen | lb. | 3.50 @ 3.75 |
| " Roses | oz. | 5.00 @ 8.00 |
| Opium, prime | lb. | 7.00 |
| Pepper, Cayenne | " | 35 @ 37 |
| Potass., Bromide | " | 40 @ 45 |
| " Chlorate | " | 22 @ 25 |
| " Iodide | " | 3.00 @ 3.10 |
| Quicksilver | " | 53 @ 55 |
| Quinine, P. & W., 1 oz. btls. | | 2.60 |
| Salicin, 1 oz. vials | oz. | 40 @ 45 |
| Santonin, 1 oz. vials | " | 70 @ 75 |
| Seed, Canary | lb. | 3¾ @ 4½ |
| " Hemp | " | 3¾ @ 4½ |
| Senna | " | 15 @ 25 |
| Seneka Root | " | 70 @ 75 |
| Shellac | " | 45 @ 50 |
| Soda, Bicarb | " | 4 @ 6 |
| " Sal | " | 1¾ @ 3 |
| Squills | " | 12 @ 14 |
| Sugar, Lead, white | " | 18 @ 20 |
| Tonqua Beans, Angostura | " | 2.50 @ 2.75 |

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# THE PHARMACIST AND CHEMIST.

A MONTHLY JOURNAL OF

PHARMACY, THERAPEUTICS, AND ALLIED SCIENCES.

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# Compressed Tablets of Soda Mint.

Sodii Bicarb., 4 Grs. Ammon. Carb., ¼ Gr. Ol. Menth. Pip., ⅛ Gtt.

A pleasant Antacid and Stomachic. The conjoint effect of so pleasant an aromatic stimulant with a avorite Antacid renders this combination especially useful in Nausea, Sick Headache, Sea Sickness, Heartburn, Indigestion, Flatulence, etc. Each tablet represents one tablespoonful of liquid Soda Mint.

One of the commonest causes of discomfort in the stomach is an excess of acid, and the development of gas, distending the organ, irritating it, and sometimes giving rise to severe headache.

Our Soda Mint is a combination of a very decided alkali with a warm aromatic and stomachic tonic; hus answering the double purpose of neutralizing the acid secretions and stimulating the walls of the tomach. For cases of colic and flatulence in children, and for the dyspepsia arising from acidity, for heartburn and for sick headache, it will be found an extremely agreeable and efficient remedy.

These tablets will give immediate relief to persons who indulge to excess in either eating or drinking; not only neutralizing acidity, but by stimulating the enfeebled digestion gives a healthy tone to the organs and the appetite, and enables the stomach to perform its functions. The same is equally true when suffering from the relaxing and debilitating effect of smoking, neutralizing the nausea and offensive breath.

We would call especial attention to the very convenient form in which we now present this valuable article, which facilitates its administration to children particularly. Travelers and business men will find a great advantage in having this excellent anti-dyspeptic put up so as to be readily portable.

ADULT DOSE.—One to two tablets, to be repeated every half hour, until relieved. For Children, let a tablet be dissolved in a tablespoonful of water; give a teaspoonful or more, according to age, until the distress is lessened. They will be found of special service, not only in colic, but an efficient aid in the early stages of summer complaints, so frequent with young children during the summer months.

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# COPY OF DR. REDWOOD'S REPORT.

## DR. REDWOOD'S ANALYTICAL DEPARTMENT,

17 BLOOMSBURY SQUARE,

LONDON, Sept. 18th, 1878.

I have examined the EXTRACT OF MALT manufactured by the "***Trommer Extract of Malt Company,***" and, judging from its physical characters and chemical reactions, I am of opinion that it fairly represents what its name indicates, that is, that it is a preparation of Malt in which are contained the essential properties of that substance, with a slight addition of Aromatic Bitter of the Hop. It has the character of a soft Extract, in the sense in which that term is used pharmaceutically, and it has evidently been prepared with great care and judgment, as it retains the property of acting on amylaceous bodies, as Diastase does, while the Extract itself bears long keeping without change.

It also possesses the property of forming with Cod Liver Oil a permanent Mixture or Emulsion, in which the taste of the Oil is very effectually covered, and its administration thus greatly facilitated.

T. REDWOOD, PH. D., F. R. C. S., etc.,

*Professor of Chemistry and Pharmacy to the*
*Pharmaceutical Society of Great Britain.*

# TROMMER'S

# EXTRACT OF MALT

The rapidly increasing demand for our IMPROVED EXTRACT OF MALT, during the four years that it has been manufactured and offered to the medical profession in America, justifies the belief that in its production here we are meeting a generally felt want.

Long experience in manufacturing Malt Extract has enabled us to completely overcome the many difficulties attending its manufacture in large quantity; and we positively assure the profession that our Extract of Malt is not only perfectly pure and reliable, but that it will keep for years, in any climate, without fermenting or moulding, and that its flavor actually improves by age. Our Extract is guaranteed to equal, in every respect, the best German make, while, by avoiding the expenses of importation, it is afforded at less than half the price of the foreign article.

The Malt from which it is made is obtained by carefully malting the very best quality of selected Toronto (Canada) Barley. The Extract is prepared by an *improved process*, which prevents injury to its properties or flavor by excess of heat.

## It represents the soluble constituents of Malt and Hops,

**Viz.,**

**Malt Sugar, Dextrine, Diastase, Resin and Bitter of Hops, Phosphates of Lime and Magnesia, and Alkaline Salts.**

Attention is invited to the following analysis of this Extract, as given by S. H. Douglas, Professor of Chemistry, University of Michigan, Ann Arbor.

TROMMER EXTRACT OF MALT CO.:

I inclose herewith my analysis of your Extract of Malt:

Malt Sugar, 46.1; Dextrine, Hop-bitter, Extractive Matter, 23.6; Albuminous Matter (Diastase), 2.469; Ash—Phosphates, 1.712; Alkalies, .377; Water, 25.7. Total, 99.958.

In comparing the above analysis with that of the Extract of Malt of the German Pharmacopœia, as given by Hager, that has been so generally received by the profession, I find it to substantially agree with that article.

Yours truly,
SILAS H. DOUGLAS,
Prof. of Analytical and Applied Chemistry

This invaluable preparation is highly recommended by the medical profession, as a most effective therapeutic agent, for the restoration of delicate and exhausted constitutions. It is very nutritious, being rich in both muscle and fat producing materials.

The very large proportion of *Diastase* renders it most effective in those forms of disease originating in *imperfect digestion of the starchy elements* of food.

A single dose of the Improved Trommer's Extract of Malt contains a larger quantity of the active properties of Malt than a pint of the best ale or porter; and not having undergone fermentation, is absolutely free from alcohol and carbonic acid.

The dose for adults is from a dessert to a tablespoonful three times daily. It is best taken after meals, pure, or mixed with a glass of milk, or in water, wine, or any kind of spirituous liquor. Each bottle contains 1¼ lbs. of the Extract.

Our preparations of Malt are for sale by Druggists generally throughout the United States and Canada, at the following prices:

| | | | |
|---|---|---|---|
| EXTRACT OF MALT, | with | Hops (Plain), | $1 00 |
| " | " | Pyrophosphate of Iron (Ferrated), | 1 00 |
| " | " | Cod Liver Oil, | 1 00 |
| " | " | Cod Liver Oil and Iodide of Iron, | 1 00 |
| " | " | Cod Liver Oil and Phosphorus, | 1 00 |
| " | " | Hypophosphites, | 1 50 |
| " | " | Iodides, | 1 50 |
| " | " | Alteratives, | 1 50 |
| " | " | Citrate of Iron and Quinia, | 1 50 |
| " | " | Pepsin, | 1 50 |

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See *Pharmacist* for March..

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### SOLUTION OF BISMUTH AND HYDRASTIA.

**A combination of Ammonia-Citrate Bismuth and the white Alkaloid of Hydrastis. Used locally in diseased mucous tissues of the Eye, Mouth or Fauces, Urethra, Vagina and Uterus.**

### HÆMORRHOIDAL LOTION. (Iodine, Stramonium and Tannic Acid.)

**For local use in hæmorrhoids and ulceration of the Os-uteri.**

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**Exhibiting the Sedative and Tonic principles, without astringency, and will not react with Salts of Iron.**

### NITROGENIZED IRON.

(Sesquioxide of Iron, Albumen and Soda, in perfect Chemical combination.)

**The most useful form of Iron Administration in Anæmia Chlorosis, etc.**

# Chemical Reports on Maltine.

## By R. Ogden Doremus, M.D., LL.D.,

PROFESSOR OF CHEMISTRY AND TOXICOLOGY, BELLEVUE HOSPITAL MEDICAL COLLEGE; PROFESSOR OF CHEMISTRY AND PHYSICS, COLLEGE OF THE CITY OF NEW YORK.

NEW YORK, April 17th, 1879.

I have visited the works at Cresskill, on the Hudson, where MALTINE is prepared, and spent portions of two days in witnessing the chemical processes for making the same. I was particularly impressed with the thorough cleanliness observed, as well as with the completeness of the apparatus employed for accomplishing the desired result—from the first treatment of the grains to the concentration of the liquid product by evaporation *in vacuo*. The operation is effective in extracting the whole of the nutritive constituents of the grains of malted Barley, Wheat and Oats, with but a slight residue, and is the most complete method yet devised, with which I am acquainted, for accomplishing this object.

MALTINE is superior in therapeutic and nutritive value to any Extract of Malt made from Barley alone, or to any other preparation of any one variety of grain. From a chemical and medical standpoint, I cannot commend too highly to my professional brethren this unique and compact variety of vegetable diet and remedial agent, nutritive to every tissue of the body, from bone to brain.

Respectfully, R. OGDEN DOREMUS.

## By Prof. John Attfield, F.C.S.,

PROFESSOR OF PRACTICAL CHEMISTRY TO THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN; AUTHOR OF A MANUAL OF GENERAL MEDICAL AND PHARMACEUTICAL CHEMISTRY.

LONDON, 17 BLOOMSBURY SQUARE, W. C., October 28th, 1878.

*To Messrs. Reed & Carnrick.*

GENTLEMEN: I have analyzed the extract of malted Wheat, malted Oats and malted Barley, which you term MALTINE. I have also prepared, myself, some extract from these three malted cereals, and have similarly analyzed it, and may state at once that it corresponds in every respect with the Maltine made by myself. As regards the various Malt Extracts in the market, I may remark that your MALTINE belongs to the non-alcoholic class, and is far richer, not only in the directly nutritious materials, but in the farina digesting Diastase. In comparison, your MALTINE is about ten times as valuable, as a flesh former from five to ten times as valuable, as a heat producer; and at least five times as valuable, as a starch digesting agent. It contains, unimpaired and in a highly concentrated form, the whole of the valuable materials which it is possible to extract from either malted Wheat, malted Oats or malted Barley.

Yours faithfully, JOHN ATTFIELD.

## LIST OF MALTINE PREPARATIONS.

***MALTINE—Plain.***
***MALTINE with Alteratives.***
***MALTINE with Beef and Iron.***
***MALTINE with Cod Liver Oil and Pancreatine.***
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# Chemical Report on Maltine.

CHEMICAL LABORATORY OF RUSH MEDICAL COLLEGE,

CHICAGO, November 18th, 1879.

In order to test the comparative merits of Maltine and the various Extracts of Malt in the market, I purchased from different druggists samples of MALTINE and of the most frequently prescribed Extracts of Malt, and have subjected them to chemical analysis.

As the result of these examinations, I find that MALTINE contains from half as much again to three times the quantity of Phosphates (Nerve and Brain food and Bone producers), and from three to fourteen times as much Diastase and other Albuminoids (Digestive agents and Muscle producers), as any of the Extracts of Malt examined. Since the value of such preparations is indicated very exactly by the proportion of these—their two most important constituents, I have no hesitation in pronouncing MALTINE greatly superior to any Extract of Malt which I examined.

The large amounts of Phosphates and Albuminoids found in MALTINE demonstrates, moreover, the superior skill and care employed in its preparation, and thoroughly warrants the confidence placed in it by the Medical Profession.

Yours respectfully,

WALTER S. HAINES,

*Prof. of Chemistry and Toxicology.*

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**FLUID AND SOLID EXTRACTS, RESINOIDS AND SUGAR-COATED PILLS.**

We warrant all our goods to be made of the finest material and in the best manner. Our patrons may depend upon getting the true article when ordering, and one always reliable and uniform. Out of our large list we mention the following comparatively New Fluid Extracts:

**YERBA SANTA—Eryodiction, CALIFORNIA BALSAM—Gnaphalium, YERBA BUENA—Micromeria Douglassii, GRINDELIA ROBUSTA, BERBERIS AQUIFOLIUM—Holly Leaved Barberry, CASCARA SAGRADA—Rhamnus Purshiana,**

Used for habitual constipation, dyspepsia, affections of the bowels and general derangement of the biliary system.

**MANZANITA. Arctostaphylos Glauca.**—A stringent tonic. Used in diarrhœa and gonorrhœa. Has a specific direction to the urinary organs.

**WHITE HEMIZONIA. Hemizonia Alba.**—A cholagogue cathartic.

**GINGER LEAF. Eremocarpus Setigerons.**—A warm stimulant and tonic.

**KIDNEY ROOT. Baccharis Pilularis.**—Stimulant and tonic to the digestive and urinary system.

The above named plants are carefully collected for us in California.

**CEREUS GRANDIFLORA. True Night Blooming Cereus.**—The blossoms only. Far superior to any other variety of Cereus. No green stalks used. Imported by us from Mexico.

**COCA. Eryothoxylon Coca.**—The leaves freshly imported from Bolivia and Peru.

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**KAVA KAVA. Ava.**—From the Sandwich Islands. **BOLDO LEAVES. Peumus Boldo.**—From Chili.

**DITA BARK. Alstonia.**—From the Philippine Islands. **JABORANDI. Pilocarpus.**—From Brazil.

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**This Granulated Extract is in a convenient form for administration, and is warranted to keep in any climate.**

It contains all the natural salts of the grain with the Malt Sugar and Diastase; in fact, all its nutritious properties. It is *very palatable, very soluble*, and dissolves easily in milk, water, or any suitable liquid. In this **Granular Form** it is far preferable to the liquid preparations, more easy and elegant for administration, more convenient for transportation, and absolutely free from any tendency to *ferment or mould*.

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☞Price Lists and Physicians' Dose Lists sent on application.

**H. A. HURLBUT & CO., Chicago, Ill., Agents for the Northwest.**

# PHOSPHOROLE.

## PHOSPHORUS and COD-LIVER OIL

have now an established position throughout the civilized world as important therapeutical agents. A *perfect combination* of the two has long been a desideratum, since they are both of value in the same disorders, while the cases in which one is demanded and the other contra-indicated are exceedingly rare.

The combination in PHOSPHOROLE has the twofold advantage of furnishing *the best possible form* for the administration of *phosphorus*, and *a more effective form* for the administration of *cod-liver oil.*

With regard to the former, it has been decided by the highest chemical and medical authorities that *phosphorus* should be administered *in a free state*, and in a vehicle which ensures its *perfect diffusion*, its *absolute unalterability*, and, as far as possible, its *prompt assimilation* without the gastric irritation to which the ordinary methods of exhibiting the agent give rise. It is well known that pills, emulsions, solutions in ether, chloroform, vegetable oils and resin, etc., have all failed to fulfill one or more of these conditions. Even an ordinary solution of phosphorus in cod-liver oil would not answer the purpose in all respects. We claim, however, that PHOSPHOROLE completely satisfies all the conditions. From the method of preparing it, in an atmosphere of dry carbonic acid, the phosphorus is *entirely dissolved without oxidation*, and by our mode of manipulation *a positive uniformity of strength* is ensured. It is then promptly bottled and sealed, and its *stability and permanence* thus secured. The exact amount of phosphorus in each dose is known, its efficiency is ensured, and the irritant effects upon the stomach are reduced to a minimum by the blandness of the oil. As a means then of administering *phosphorus* in the many cases in which it is indicated as a *nervous tonic and stimulant*, it is claimed that PHOSPHOROLE is the best attainable in the present state of our knowledge.

The value of *cod-liver oil* in phthisis is so familiar to the physician that it is needless to dwell upon it. But the value of *phosphorus* is also universally recognized in this disease, especially when complicated with nervous derangements. The *combination* of the two therefore furnishes a more effective form for the administration of cod-liver oil in the great majority of cases in which that remedy is indicated, and one which will at once commend itself to the profession.

A dose of two teaspoonfuls of PHOSPHOROLE contains $\frac{1}{100}$ of a grain of phosphorus. This dose, when given after a meal, is effective, and not very liable to interfere with digestion. *Phosphorus is cumulative in its action, and should be administered with watchful care.* About $\frac{1}{12}$ grain is considered the largest safe dose, and we rarely need go higher than $\frac{1}{20}$ or $\frac{1}{30}$ of a grain. At the very first appearance of the smallest gastric derangement, the exhibition of phosphorus should be stopped.

PHOSPHOROLE is handsomely put up in pint bottles only, and may be obtained at all first-class druggists throughout the United States.

*Descriptive Circulars furnished upon application.*

*Correspondence with Physicians solicited.*

## BILLINGS, CLAPP & CO.,

MANUFACTURING CHEMISTS, BOSTON.

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The only Pepsin prepared from the Calf's Rennet and Pig's Stomach COMBINED. It coagulates milk, dissolves albumen and digests fibrin in the highest degree.

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And others of medicinal value and reputation.

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**SYDNEY**, *1879.*

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***Warner & Co.'s Standard Preparations*** for sale by ***FULLER & FULLER, MORRISSON, PLUMMER & CO.***, and all druggists in Chicago and throughout the country.

# KEASBEY & MATTISON,

MANUFACTURERS OF

# Sulphate Quinia, Sulphate Cinchonidia,

## SULPHATE QUINIDIA, SULPHATE CINCHONIA.

# Revised Price List.

## QUININE SULPHATE, and BISULPHATE PILLS.

(Made from perfectly pure "K. & M." Sulphate of Quinine, manufactured by Keasbey & Mattison, Philadelphia, and each pill guaranteed to contain the full amount of Sulphate of Quinine claimed by the label.)

(In effect October 16th, 1880, superseding all previous lists.)

### QUINIA SULPHATE.

| | | | |
|---|---|---|---|
| 1 grain | Sugar-Coated or Gelatine-Coated | $1 20 | $ 5 75 |
| 2 " | " " | 2 30 | 11 25 |
| 3 " | " " | 3 40 | 16 95 |
| 4 " | " " | 4 70 | 23 25 |
| 5 " | " " | 5 60 | 27 75 |

### CINCHONIDIA SULPHATE.

Cinchonidia at present is unchanged, and no advance has taken place in the pills containing this article, though higher prices for both Cinchonidia and Quinia Sulphates may be confidently expected.

| | | | |
|---|---|---|---|
| 1 grain | Sugar-Coated or Gelatine-Coated | $ 50 | $ 2 25 |
| 2 " | " " | 90 | 4 25 |
| 3 " | " " | 1 25 | 6 00 |
| 4 " | " " | 1 60 | 7 75 |
| 5 " | " " | 2 00 | 9 75 |

### DEXTRO-QUININE.

| | | | |
|---|---|---|---|
| 1 grain | Sugar-Coated or Gelatine-Coated | $ 75 | $ 3 25 |
| 2 " | " " | 1 25 | 6 05 |
| 3 " | " " | 1 75 | 8 55 |
| 4 " | " " | 2 25 | 11 05 |
| 5 " | " " | 2 75 | 13 55 |

**Trade Discount:—25 Per Cent.**

# KEASBEY & MATTISON,

*Manufacturers of Sulphate of Quinine and other Fine Chemicals,*

**Nos. 328, 330, 332 and 334 North Front Street,**

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Quinia and Cinchonidia Sulphates supplied in any quantity. Write for quotations.

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## Podophyllin and Leptandrin,

Of which articles we were the first manufacturers. Low prices in bulk for manufacturers of Proprietary Medicines or for Export.

## Salts of Hydrastis Canadensis.

**Hydrastia Sulphate** (Sulph. Berberina).
" **Muriate** (Mur. " ).
" **Phosphate** (Phos. " ).
**Hydrastine**—White and Yellow Principles combined.
**Hydrastina Sulph.** (Sulph. of White Alkaloid.) } Sulph. Hydrastia of Mahle.

## "Fluid Hydrastis."

A concentrated preparation without Alcohol; miscible in Alcohol, Syrup, Water or Glycerin. Manufactured by us only.

## Sanguinarina—Nitrate and Sulphate.

## Sugar-Coated Pills and Granules.

We claim for our Pills all the essential qualities, and warrant them equal in finish to any in the market. Special prices and terms for special formula when 3,000 or upward are ordered at one time.

## Green Plant and other Fluid Extracts.

These remedies are positive medicinal agents—positive, not because they will invariably cure disease, but because their sensible properties are ***definite, uniform*** and ***certain.***

## Imported German Tinctures,

(Prepared expressly for us from the fresh drug), in original packages of one pound (Eng.) each.

## Tincture Gelsemium—from Green Root,

Originally introduced by us in 1852.

## Homœopathic Tinctures,

Supplied to Homœpathic Pharmacies and Druggists at prices much below the rates usually charged for such preparations.

## Powdered Alcoholic Extracts,

The same medicinal strength as the solid extracts, and for which they may be substituted.

**A full line of Wm. S. Merrell & Co.'s Preparations kept in stock, and orders filled at manufacturers' prices by**

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PREMIUM FOR "GENERAL EXCELLENCE IN MANUFACTURE."

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**CAPSULES, Hard and Soft, of all kinds;**

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AND

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Samples sent free. ☞ Specify PLANTEN'S CAPSULES on all orders. Sold by all Druggists.

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**FOR SALE BY ALL WHOLESALE DRUGGISTS.**

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**OAT MEAL AND GLYCERIN**

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**Kendall Manufacturing Co.**

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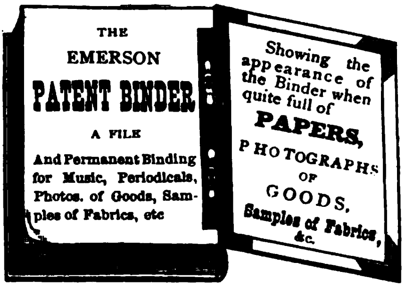
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**JOHN R. BARRETT & CO., 150 State St., Chicago.**

# REDUCTION IN PRICES!

It will be remembered that we made no advance last Spring in our prices of Sulphate of Quinine Pills when Quinine advanced from $2.50 to $3.25, and we accordingly make no reduction now. It is our desire to keep the list as uniform as possible.

We claim that McKesson & Robbins' Bi-Sulphate of Quinine pills are more soluble and more readily assimilated than Sulphate of Quinine taken in powder, and have lately strongly urged their general use. The demand has largely increased, and experience has justified our further claim that on account of PROMPT ACTION and PERFECT SOLUBILITY Bi-Sulphate of Quinine, although containing less of the Quinia Alkaloid, is MORE EFFICACIOUS, dose for dose, than Sulphate of Quinine.

Bi-Sulphate of Quinine was formerly sold, 50 and even 75 cents per oz., higher than the Sulphate, but we have brought the price of McKesson & Robbins' beautifully white and uniform crystals to the same figure as the Sulphate, and were it not for the greater difficulty attending the crystallization of the former for the market, due to its ready solubility, it could be sold lower than the Sulphate.

We have deemed it advisable in order to facilitate their general introduction, to REDUCE PRICES of our Bi-Sulphate of Quinine Pills to the schedule below, and have no doubt that their sale will be largely increased.

We would particularly request that McK. & R.'s Bi-Sulphate of Quinine Pills be specified, as they are made from the definite salt of our own manufacture.

Very respectfully,

*November 12, 1880.* McKESSON & ROBBINS.

## McKESSON & ROBBINS' BI-SULPHATE OF QUININE PILLS.

| | 100 Pills. | 500 Pills. |
|---|---|---|
| Quinine, Bi-Sulphate, ¼ grain | $ 65 | $3 05 |
| Quinine, Bi-Sulphate, ½ " | 80 | 3 80 |
| Quinine, Bi-Sulphate, 1 " | 1 15 | 5 55 |
| Quinine, Bi-Sulphate, 1½ grains | 1 70 | 8 30 |
| Quinine, Bi-Sulphate, 2 " | 2 25 | 11 05 |
| Quinine, Bi-Sulphate, 3 " | 3 25 | 16 05 |
| Quinine, Bi-Sulphate, 4 " | 4 40 | 21 80 |
| Quinine, Bi-Sulphate, 5 " | 5 40 | 26 80 |

We also call attention to the large reduction in prices of

## McKESSON & ROBBINS' SULPHATE OF CINCHONIDIA PILLS.

| | 100 Pills. | 500 Pills. |
|---|---|---|
| Cinchonidia, Sulphate, 1 grain | $ 50 | $2 30 |
| Cinchonidia, Sulphate, 2 grains | 88 | 4 20 |
| Cinchonidia, Sulphate, 3 " | 1 20 | 5 80 |
| Cinchonidia, Sulphate, 4 " | 1 60 | 7 80 |
| Cinchonidia, Sulphate, 5 " | 2 00 | 9 80 |

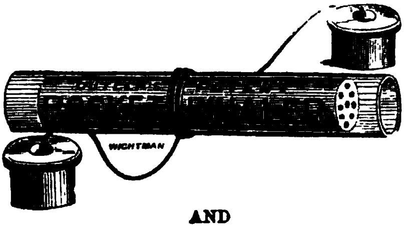
We can recommend the use of our Pills of McKesson & Robbins' Powdered Purified Chinoidine for a cheap anti-malarial remedy. The efficiency of this product of Cinchona Bark has been repeatedly attested to be superior to several empirical preparations which are put up under fancy appellations and sold at extravagant prices.

## McKesson & Robbins' Powdered Purified Chinoidine Pills.

| | 100 Pills. | 500 Pills. |
|---|---|---|
| Chinoidine, Powdered Purified, 1 grain | $ 45 | $2 05 |
| Chinoidine, Powdered Purified, 2 grains | 60 | 2 80 |
| Chinoidine, Powdered Purified, 3 " | 80 | 3 80 |
| Chinoidine, Powdered Purified, 5 " | 1 20 | 5 80 |

CUTLERS

PATENT POCKET INHALER



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**Carbolate of Iodine Inhalant.**

The most efficient and certain cure for Catarrh, Bronchitis, Asthma, Hoarseness, Loss of Voice, and all diseases of the Throat and Lungs. Superior to all other remedies, and sanctioned by physicians of every school. No method of treatment for Catarrh and Lung Diseases has been more successful.

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GLYCERINE

Chemically Pure, White, Inodorous, and of Full
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Sulphur

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MANUFACTURERS OF

**FINE TOILET SOAPS**

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Cocoanut Oil

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**PATENT PERFORATED PILL BOXES.**

PRICE PER GROSS—A, $3.00; B, $3.50; C, $4.00; D, $1.50; E, $1.75; F, $2.00; G, $2.50.

**PATENT OINTMENT BOXES—Impervious to Grease.**

PRICE PER GROSS—¼ oz., $2.25; ½ oz., $2.75; 1 oz., $3.25; 2 oz., $3.75; 3 oz., $4.00; 4 oz., $4.50.

**SUPPOSITORY BOXES—For Dispensing.**

½ doz. or 1 doz., price per gross, $4.50 and $6.00.

We label any of pill or powder box at very small cost.
We do *GOOD WORK*, at fair Prices, and deliver promptly.
We will send illustrated catalogue on application.
☞ Our goods are for sale by all the principal jobbers.

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## GENERAL JOB PRINTERS

AND

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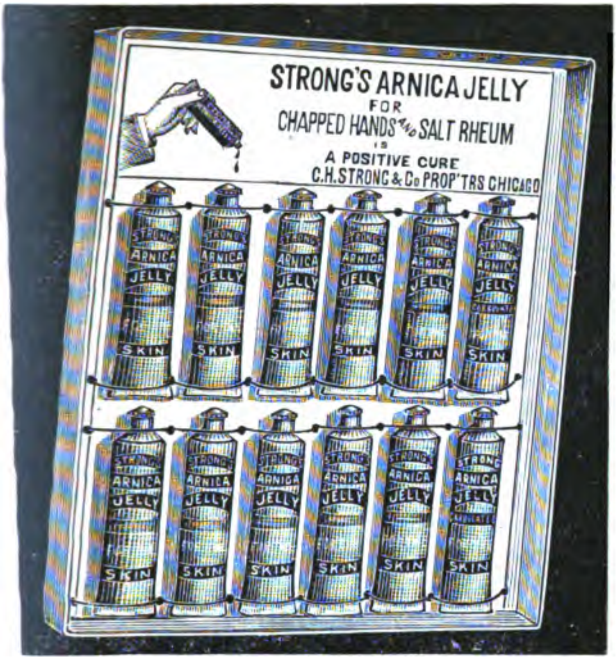

# ANY RETAIL DRUGGIST

Who buys a box of **STRONG'S ARNICA JELLY** will add a mighty good selling thing to his stock. It has become a standard article wherever introduced. See what one of Chicago's leading drug firms say about it:

"C. H. STRONG & Co.—*Gentlemen:* Your box of Arnica Jelly, with showy card attached, is so handsome that we let it lie on top of our front show case. It catches the eye and sells better than anything of the kind we ever handled. We can recommend it to the trade as a good thing to take hold of. Yours truly, D. R. DYCHE & CO., "Cor. Randolph and State Sts., Chicago.

Packed just as you see it in the illustration,—metal tubes four inches long, held with elastic cord. Sold by jobbing drug houses throughout the West for $1.50 per doz. ADD A BOX TO YOUR NEXT ORDER.

**THE INFALLIBLE CORN AND WART CURE,**

Which was illustrated in this space last month, is meeting with a large sale, and the trade are ordering their fifth, sixth and seventh dozen since we took hold of it. HALSEY BROS., of the Chicago Homœopathic Pharmacy, write us:

"C. H. STRONG & Co.—*Gents:* During the last three months we have sold over our counter, at retail, five dozen of the *Infallible Corn and Wart Cure*, and our patrons are all satisfied with its action."

This article is packed in a little case with glass lid to set on your counter and do its own "blowing." Price, per dozen, $1.50, with glass front case. Sold by jobbers everywhere.

Our other SPECIALTIES are:

**VETERINARY ARNICA JELLY,** ½ lb. and 1 lb. tin cans, $3.75 and $8.00 per doz.

**HARRISON'S CUBEBS CIGARETTES,** 18 in a box, German and English, $1.50 per dozen boxes.

**ELDER FLOWER HAIR OIL,** Crescent shape bottles, full 5 oz. $1.75 per dozen.

**DE LEON'S COCOA INVIGORATOR,** ***"The best Hair Dressing in the world for 50 cents;"*** $3.50 per dozen.

Send for ***"Our Offer to the Trade"*** on Druggists' Sundries ***Special rates*** to wholesale houses. Correspondence solicited. All jobbers furnish our specialties.

**C. H. STRONG & CO., 52 Dearborn St., Chicago.**

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# MAYNARD'S GELATINE PILL-COATING MACHINE AND PILL-BOX.

This Machine and Pill-Box enables the pharmacist to dispense any ordinary prescription for pills in from three to five minutes extra time, with the pills handsomely coated with gelatine. The Machine is equally adapted to coating pills for stock; enabling the pharmacist to manufacture his own pills equal in appearance to those of any manufacture. While on exhibition at the late meeting of the American Pharmaceutical Association, they received the hearty indorsement of many of the most eminent pharmacists of this country.

The Machine is made entirely of metal, plated with nickel and finely finished. It is the most durable, the most complete, in fact, the only thoroughly practical machine in the market. Read what one of the oldest and most reliable retail druggists of the West have to say:

H. S. MAYNARD—*Dear Sir:* We have coated thousands of pills with your Pill Coating Machine with perfect success. The saving in the price of two (2) grain quinine pills in one month alone has paid the price of your machine.

Yours truly,
GALE & BLOCKI.

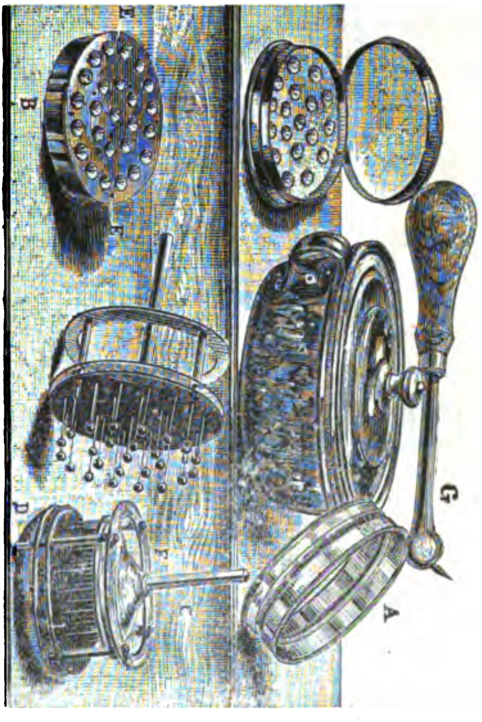
CHICAGO, September 9th, 1880.

**PRICE LIST.**

No. 1 Machine, with one Dipper and Copper Gelatine Heater complete, $ 7.00.
No. 2 Machine, with two Dippers and Copper Gelatine Heater complete, 10.00.

**H. S. MAYNARD.**
**628 W. Lake Street, Chicago.**

Patented July 6, 1880



# 1880. HOLIDAY SEASON. 1881.

Pocket Books, Calf and Sheep Wallets,
Card and Letter Cases, Bill Books,
Buck and Kid Purses,
Cigar and Cigarette Cases,

And a general line of Leather Goods in innumerable designs.

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Estimates for specialties will be cheerfully furnished, and satisfaction guaranteed in every instance

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ESTABLISHED IN 1840.

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*Cellar and Office, 170 Madison Street, CHICAGO:*

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Dry Catawba, Vintage ............1870
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Cherry Wine, " ............1876

Blackberry Wine, Vintage ......1875
Communion Wine, " ......1873
Walter Sherry, " ......1872
Walter Sherry, Dry, " ......1872

Isabella Port, Vintage ............[illegible]
Native Port, " ............[illegible]
Pure Juice Port, " ............[illegible]
Pure Juice Port, Dry, Vintage...[illegible]

BRANDIES.

Grape Brandy, Vintage ............1875
" " " ............1872
" " " ............1869

Apple Brandy, Vintage ............1874
Tennessee Peach, Vintage ......1874

Blackberry, Vintage ............[illegible]
Cherry, Vintage ............[illegible]

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## The Complete Steam Atomizer,

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INHALATION, ETC.

COMPACT,
PORTABLE,
DURABLE

## Double Bulb Atomizer,

FOR

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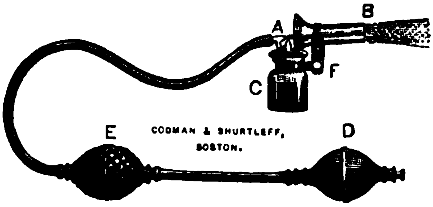

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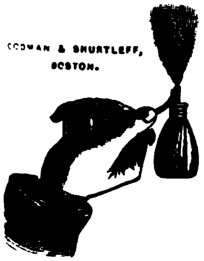

FOR

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**OUR NEW SPECIALTY.**

THESE BRUSHES ARE FIRST-CLASS. THE STYLES ARE NEAT AND TASTY.

WIRE FASTENED,
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IN SOLID ROSEWOOD,
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**At all prices from $5.00 to $30.00 per dozen**

These Brushes are equal to the imported, and sold lower than the Foreign made with the same quality of Bristles.

**We also have the largest line of TOOTH AND NAIL BRUSHES in the West at the lowest prices.**

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Particular attention is called to our extra qualities of

## Paint, Varnish, and Whitewash Brushes,

Which are made of the Best Stock and Workmanship, and are equal to the Best. Samples at Wholesale to Dealers only. Also our Illustrated Price List on application.

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# LACTOPEPTINE

We take pleasure in calling the attention of the Profession to LACTO-
PTINE. After a long series of careful experiments we are able to produce
various components in an absolutely pure state, thus removing all unpleas-
t odor and taste (also slightly changing the color). We can confidently
ıim that its digestive properties are largely increased thereby, and can
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LACTOPEPTINE is the most important remedial agent ever presented to
ıe Profession for Indigestion, Dyspepsia, Vomiting in Pregnancy, Cholera
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; contains the five active agents of digestion, viz.: Pepsin, Pancreatine,
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rith Sugar of Milk.

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| | | | |
|---|---|---|---|
| ugar of Milk | 40 ounces. | Veg. Ptyalin or Diastase | 4 drachms. |
| 'epsin | 8 ounces. | Lactic Acid | 5 fl. drachms. |
| 'ancreatine | 6 ounces. | Hydrochloric Acid | 5 fl. drachms. |

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